

# **LG Chem, Ltd.**

**Separate Financial Statements  
December 31, 2017 and 2016**

# LG Chem, Ltd.

## Index

December 31, 2017 and 2016

---

	Page(s)
<b>Independent Auditor's Report</b> .....	1 - 2
<b>Separate Financial Statements</b>	
Separate Statements of Financial Position .....	3 - 4
Separate Statements of Profit or Loss .....	5
Separate Statements of Comprehensive Income.....	6
Separate Statements of Changes in Equity .....	7
Separate Statements of Cash Flows .....	8
Notes to the Separate Financial Statements .....	9 - 73
<b>Report on Independent Accountants' Review of Internal Accounting Control System</b> .	74 - 75
<b>Report on the Operations of Internal Accounting Control System</b> .....	76

## Independent Auditor's Report

(English Translation of a Report Originally Issued in Korean)

To the Shareholders and Board of Directors of  
LG Chem, Ltd.

We have audited the accompanying separate financial statements of LG Chem, Ltd. (the Company), which comprise the separate statements of financial position as at December 31, 2017 and 2016, and the separate statements of profit or loss, separate statements of comprehensive income, separate statements of changes in equity and separate statements of cash flows for the years then ended, and notes to the separate financial statements, including a summary of significant accounting policies and other explanatory information.

### Management's Responsibilities for the Financial Statements

Management is responsible for the preparation and fair presentation of the separate financial statements in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS), and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

### Auditor's Responsibilities

Our responsibility is to express an opinion on the separate financial statements based on our audits. We conducted our audits in accordance with Korean Standards on Auditing. Those standards require that we comply with ethical requirements, and plan and perform the audit to obtain reasonable assurance about whether the separate financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the separate financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the separate financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the separate financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the separate financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

**Opinion**

In our opinion, the accompanying separate financial statements present fairly, in all material respects, the separate financial position of LG Chem, Ltd. as at December 31, 2017 and 2016, and its separate financial performance and its separate cash flows for the years then ended in accordance with Korean IFRS.

**Other Matter**

Auditing standards and their application in practice vary among countries. The procedures and practices used in the Republic of Korea to audit such financial statements may differ from those generally accepted and applied in other countries.

Seoul, Korea

March 6, 2018

This report is effective as of March 6, 2018, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying separate financial statements and notes thereto. Accordingly, the readers of the audit report should understand that there is a possibility that the above audit report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

**LG Chem, Ltd.**  
**Separate Statements of Financial Position**  
**December 31, 2017 and 2016**

<i>(in millions of Korean won)</i>	<b>Notes</b>	<b>2017</b>	<b>2016</b>
<b>Assets</b>			
<b>Current assets</b>			
Cash and cash equivalents	3, 5, 6	1,649,689	956,068
Trade receivables	3, 5, 7, 31	3,781,000	3,010,529
Other receivables	3, 5, 7, 31	723,968	911,656
Other current assets	13	143,873	129,154
Inventories	9	2,074,555	1,775,011
Assets held for sale	35	4,594	2,306
Total current assets		8,377,679	6,784,724
<b>Non-current assets</b>			
Other receivables	3, 5, 7	114,834	112,686
Other financial assets	3, 5, 8	18,683	18,785
Investments in subsidiaries	10	2,462,468	1,951,067
Investments in associates and joint ventures	10	193,145	203,290
Deferred income tax assets	28	147,631	20,930
Property, plant and equipment	11	8,348,088	7,268,225
Intangible assets	12	1,418,188	397,453
Investment properties		1,027	1,039
Other non-current assets	13	66,393	17,695
Total non-current assets		12,770,457	9,991,170
<b>Total assets</b>		<b>21,148,136</b>	<b>16,775,894</b>
<b>Liabilities</b>			
<b>Current liabilities</b>			
Trade payables	3, 5, 31	1,397,841	1,091,037
Other payables	3, 5, 31	1,722,151	949,711
Borrowings	3, 5, 14	135,059	650,808
Other financial liabilities	3, 5, 8	6,374	-
Provisions	15	39,663	35,243
Income tax payables		373,745	199,121
Other current liabilities	3, 17	783,943	212,843
Total current liabilities		4,458,776	3,138,763
<b>Non-current liabilities</b>			
Other payables	3, 5	5,704	11,644
Borrowings	3, 5, 14	875,176	30,272
Provisions	15	86,175	42,986
Net defined benefit liabilities	16	148,554	46,390
Other non-current liabilities	17	68,219	29,508
Total non-current liabilities		1,183,828	160,800
<b>Total liabilities</b>		<b>5,642,604</b>	<b>3,299,563</b>

**LG Chem, Ltd.**  
**Separate Statements of Financial Position**  
**December 31, 2017 and 2016**

<i>(in millions of Korean won)</i>	<b>Notes</b>	<b>2017</b>	<b>2016</b>
<b>Equity</b>			
Share capital	1, 19	391,406	369,500
Capital surplus		2,283,378	1,166,764
Other components of equity	21	(354,945)	(15,484)
Accumulated other comprehensive income		(2,802)	1,221
Retained earnings	20	13,188,495	11,954,330
<b>Total equity</b>		<u>15,505,532</u>	<u>13,476,331</u>
<b>Total liabilities and equity</b>		<u>21,148,136</u>	<u>16,775,894</u>

The above separate statements of financial position should be read in conjunction with the accompanying notes.

**LG Chem, Ltd.**  
**Separate Statements of Profit or Loss**  
**Years Ended December 31, 2017 and 2016**

---

<i>(in millions of Korean won, except per share amounts)</i>	<b>Notes</b>	<b>2017</b>	<b>2016</b>
<b>Revenue</b>	31	20,880,236	17,264,845
<b>Cost of sales</b>	23, 31	<u>(16,369,235)</u>	<u>(13,716,875)</u>
<b>Gross profit</b>		4,511,001	3,547,970
Selling and administrative expenses	22, 23, 31	<u>(2,217,772)</u>	<u>(1,734,725)</u>
<b>Operating profit</b>		2,293,229	1,813,245
Finance income	5, 25	229,046	235,822
Finance costs	5, 25	(220,556)	(148,051)
Other non-operating income	5, 26	362,882	461,469
Other non-operating expenses	5, 27, 33	<u>(663,966)</u>	<u>(618,411)</u>
<b>Profit before income tax</b>	32	2,000,635	1,744,074
<b>Income tax expense</b>	28	<u>(395,412)</u>	<u>(364,485)</u>
<b>Profit for the period</b>		<u>1,605,223</u>	<u>1,379,589</u>
<b>Earnings per share for profit for the period</b>			
<b>(in won)</b>	29		
Basic and diluted earnings per ordinary share		20,929	18,756
Basic and diluted earnings per preferred share		21,166	18,806

The above separate statements of profit or loss should be read in conjunction with the accompanying notes.

**LG Chem, Ltd.**  
**Separate Statements of Comprehensive Income**  
**Years Ended December 31, 2017 and 2016**

---

<i>(in millions of Korean won)</i>	<b>Notes</b>	<b>2017</b>	<b>2016</b>
<b>Profit for the period</b>		<u>1,605,223</u>	<u>1,379,589</u>
<b>Other comprehensive income</b>			
<i>Items that will not be reclassified to profit or loss</i>			
Remeasurements of net defined benefit liability	16	(4,141)	(24,204)
Income tax relating to these items		1,138	5,858
<i>Items that may be subsequently reclassified to profit or loss</i>			
Changes in valuation of available-for-sale financial assets	8	(5,550)	2,392
Income tax relating to these items		<u>1,527</u>	<u>(580)</u>
<b>Other comprehensive income for the period, net of tax</b>		<u>(7,026)</u>	<u>(16,534)</u>
<b>Total comprehensive income for the period</b>		<u>1,598,197</u>	<u>1,363,055</u>

The above separate statements of comprehensive income should be read in conjunction with the accompanying notes.



**LG Chem, Ltd.**  
**Separate Statements of Changes in Equity**  
**Years Ended December 31, 2017 and 2016**

<i>(in millions of Korean won)</i>							
	Notes	Share capital	Capital surplus	Other components of equity	Accumulated other comprehensive income	Retained earnings	Total equity
<b>Balance at January 1, 2016</b>		369,500	1,166,764	(15,484)	(591)	10,924,374	12,444,563
<b>Comprehensive income</b>							
Profit for the period		-	-	-	-	1,379,589	1,379,589
Remeasurements of net defined benefit liability	16	-	-	-	-	(18,346)	(18,346)
Changes in valuation of available-for-sale financial instruments		-	-	-	1,812	-	1,812
<b>Total comprehensive income</b>		-	-	-	1,812	1,361,243	1,363,055
<b>Transactions with owners</b>							
Dividends	30	-	-	-	-	(331,287)	(331,287)
<b>Total transactions with owners</b>		-	-	-	-	(331,287)	(331,287)
<b>Balance at December 31, 2016</b>		369,500	1,166,764	(15,484)	1,221	11,954,330	13,476,331
<b>Balance at January 1, 2017</b>		369,500	1,166,764	(15,484)	1,221	11,954,330	13,476,331
<b>Comprehensive income</b>							
Profit for the period		-	-	-	-	1,605,223	1,605,223
Remeasurements of net defined benefit liability	16	-	-	-	-	(3,003)	(3,003)
Changes in valuation of available-for-sale financial instruments		-	-	-	(4,023)	-	(4,023)
<b>Total comprehensive income</b>		-	-	-	(4,023)	1,602,220	1,598,197
<b>Transactions with owners</b>							
Business combination	34	21,906	1,116,614	(337,211)	-	-	801,309
Purchase of treasury shares		-	-	(2,250)	-	-	(2,250)
Dividends	30	-	-	-	-	(368,055)	(368,055)
<b>Total transactions with owners</b>		21,906	1,116,614	(339,461)	-	(368,055)	431,004
<b>Balance at December 31, 2017</b>		391,406	2,283,378	(354,945)	(2,802)	13,188,495	15,505,532

The above separate statements of changes in equity should be read in conjunction with the accompanying notes.

**LG Chem, Ltd.**  
**Separate Statements of Cash Flows**  
**Years Ended December 31, 2017 and 2016**

<i>(in millions of Korean won)</i>	<b>Notes</b>	<b>2017</b>	<b>2016</b>
<b>Cash flows from operating activities</b>			
Cash generated from operations	32	3,153,801	2,663,581
Interest received		22,246	38,351
Interest paid		(26,642)	(27,319)
Dividends received		71,229	76,364
Income taxes paid		(361,696)	(511,252)
<b>Net cash inflow from operating activities</b>		<b>2,858,938</b>	<b>2,239,725</b>
<b>Cash flows from investing activities</b>			
Decrease in other receivables		651,839	591,000
Decrease in other non-current receivables		29,143	19,551
Proceeds from disposal of investments in joint ventures		-	23,724
Proceeds from disposal of business		14,500	-
Proceeds from disposal of available-for-sale financial assets		-	41
Proceeds from disposal of property, plant and equipment		384,169	12,208
Proceeds from disposal of intangible assets		7,714	540
Business combination, net of cash acquired	34	36,246	(133,810)
Increase in other receivables		(430,000)	(320,000)
Increase in other non-current receivables		(33,056)	(75,546)
Acquisition of investments in subsidiaries		(507,441)	(895,483)
Acquisition of investments in associates and joint ventures		(28,720)	(17,555)
Acquisition of available-for-sale financial assets		(3,001)	(2,601)
Acquisition of property, plant and equipment		(1,492,451)	(818,890)
Acquisition of intangible assets		(89,527)	(56,392)
<b>Net cash outflow from investing activities</b>		<b>(1,460,585)</b>	<b>(1,673,213)</b>
<b>Cash flows from financing activities</b>			
Proceeds from borrowings		797,632	-
Repayments of borrowings		(1,133,841)	(701,261)
Dividends		(368,055)	(331,300)
Purchase of treasury shares		(2,250)	-
<b>Net cash outflow from financing activities</b>		<b>(706,514)</b>	<b>(1,032,561)</b>
<b>Net increase (decrease) in cash and cash equivalents</b>		<b>691,839</b>	<b>(466,049)</b>
Cash and cash equivalents at the beginning of the financial year		956,068	1,423,061
Effects of exchange rate changes on cash and cash equivalents		1,782	(944)
<b>Cash and cash equivalents at the end of year in the separate statement of financial position</b>		<b>1,649,689</b>	<b>956,068</b>

The above separate statements of cash flows should be read in conjunction with the accompanying notes.

# **LG Chem, Ltd.**

## **Notes to the Separate Financial Statements**

### **December 31, 2017 and 2016**

---

#### **1. General Information**

LG Chem, Ltd. (the Company) was spun off on April 1, 2001, from LG Chem Investment Ltd. (now LG Corp., formerly LG Chemical Ltd.).

As at December 31, 2017, the Company has its manufacturing facilities in Yeosu, Daesan, Ochang, Cheongju, Ulsan, Naju, Iksan, Paju, Osong, Onsan and Gimcheon.

The Company is authorized to issue 292 million shares of ordinary shares with par value of ₩5,000 per share. As at December 31, 2017, the Company has issued 70,592,343 ordinary shares (₩352,962 million) and 7,688,800 preferred shares (₩38,444 million). The largest shareholder of the Company is LG Corp., which owns 33.34% of the Company's ordinary shares. Preferred shareholders have no voting rights but are entitled to receive dividends at a rate 1% more than those paid to ordinary shareholders.

#### **2. Summary of Significant Accounting Policies**

The principal accounting policies applied in the preparation of these separate financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

##### **2.1 Basis of Preparation**

The Company maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS). The accompanying separate financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

Certain information attached to the Korean language financial statements, but not required for a fair presentation of the Company's financial position, financial performance or cash flows, is not presented in the accompanying separate financial statements.

The separate financial statements of the Company have been prepared in accordance with Korean IFRS. These are the standards, subsequent amendments and related interpretations issued by the International Accounting Standards Board (IASB) that have been adopted by the Republic of Korea.

The preparation of financial statements requires the use of critical accounting estimates. Management also needs to exercise judgement in applying the Company's accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the separate financial statements are disclosed in Note 4.

##### **2.2 Changes in Accounting Policy and Disclosures**

###### *(a) New and amended standards adopted by the Company*

The Company has applied the following standards and amendments for the first time for their annual reporting period commencing January 1, 2017. The adoption of these amendments did not have any material impacts on the financial statements.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

- Amendments to Korean IFRS 1007 *Statement of Cash Flows*
- Amendments to Korean IFRS 1012 *Income Tax*
- Amendments to Korean IFRS 1112 *Disclosures of Interests in Other Entities*

*(b) New standards and interpretations not yet adopted by the Company*

Certain new accounting standards and interpretations that have been published that are not mandatory for annual reporting period commencing January 1, 2017 and have not been early adopted by the Company are set out below.

- Korean IFRS 1109 *Financial Instruments*

The new standard for financial instruments issued on September 25, 2015 is effective for annual periods beginning on or after January 1, 2018 with early application permitted. This standard will replace Korean IFRS 1039 *Financial Instruments: Recognition and Measurement*. The Company will apply the standards for annual periods beginning on or after January 1, 2018.

The standard requires retrospective application with some exceptions. For example, an entity is not required to restate prior period in relation to classification and measurement (including impairment) of financial instruments. The standard requires prospective application of its hedge accounting requirements for all hedging relationships except the accounting for time value of options and other exceptions.

Korean IFRS 1109 *Financial Instruments* requires three main areas including: (a) classification and measurement of financial assets on the basis of the entity's business model for managing financial assets and the contractual cash flow characteristics of the financial assets, (b) a new impairment model of financial instruments based on the expected credit losses, and (c) hedge accounting including expansion of the range of eligible hedging instruments and hedged items that qualify for hedge accounting or change of a method of hedge effectiveness assessment.

An effective implementation of Korean IFRS 1109 requires preparation processes including financial impact assessment, accounting policy establishment, accounting system development and the system stabilization. The impact on the Company's financial statements due to the application of the standard is dependent on judgements made in applying the standard, financial instruments held by the Company and macroeconomic variables.

With the implementation of Korean IFRS 1109, the Company is preparing for updates of internal management process and accounting system related to financial instruments reporting. The Company does not expect the amendments to have a significant impact on the financial statements.

- Korean IFRS 1115 *Revenue from Contracts with Customers*

The Company will apply Korean IFRS 1115 *Revenue from Contracts with Customers* issued on November 6, 2015 for annual reporting periods beginning on or after January 1, 2018. Earlier adoption is permitted under Korean IFRS. This standard replaces Korean IFRS 1018 *Revenue*, Korean IFRS 1011 *Construction Contracts*, Interpretation 2031 *Revenue-Barter Transactions Involving Advertising Services*, Interpretation 2113 *Customer Loyalty Programs*, Interpretation 2115 *Agreements for the Construction of Real Estate* and Interpretation 2118 *Transfers of assets from customers*. The Company must apply Korean IFRS 1115 *Revenue from Contracts with Customers* within annual reporting periods beginning on or after January 1, 2018, and will elect the modified retrospective approach which will recognize the cumulative impact of initially applying the revenue standard as an adjustment to retained earnings as at January 1 2018, the period of initial application.

# LG Chem, Ltd.

## Notes to the Separate Financial Statements

### December 31, 2017 and 2016

---

Korean IFRS 1018 and other current revenue standards identify revenue as income that arises in the course of ordinary activities of an entity and provides guidance on a variety of different types of revenue, such as, sale of goods, rendering of services, interest, dividends, royalties and construction contracts. However, the new standard is based on the principle that revenue is recognized when control of a good or service transfers to a customer so the notion of control replaces the existing notion of risks and rewards. A new five-step process must be applied before revenue from contract with customers can be recognized:

- Identify contracts with customers
- Identify the separate performance obligation
- Determine the transaction price of the contract
- Allocate the transaction price to each of the separate performance obligations, and
- Recognize the revenue as each performance obligation is satisfied.

As at December 31, 2017, the Company is preparing for updates of internal management process and accounting system in relation to implementation of Korean IFRS 1115. The Company does not expect the amendments to have a significant impact on the financial statements.

- Amendments to Korean IFRS 1028 *Investments in Associates and Joint Ventures*
- Amendments to Korean IFRS 1102 *Share-based Payment*
- Amendment to Korean IFRS 1040 *Transfers of Investment Property*
- Enactment of Korean IFRS 1116 *Leases*
- Enactments to Interpretation 2122 *Foreign Currency Transaction and Advance Consideration*

### 2.3 Subsidiaries, Joint Ventures, and Associates

The financial statements of the Company are the separate financial statements prepared in accordance with Korean IFRS 1027 *Separate Financial Statements*. Investments in subsidiaries, joint ventures and associates are recognized at cost under the direct equity method. Management applied the carrying amounts under the previous K-GAAP at the time of transition to the Korean IFRS as deemed cost of investments. The Company recognizes dividend income from subsidiaries, joint ventures and associates in profit or loss when its right to receive the dividend is established.

### 2.4 Foreign Currency Translation

#### (a) Functional and presentation currency

Items included in the financial statements of each of the Company are measured using the currency of the primary economic environment in which each entity operates (the "functional currency"). The financial statements are presented in Korean won, which is the Company's functional and presentation currency.

#### (b) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies at year end exchange rates are generally recognized in profit

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

or loss. Non-monetary items that are measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was determined. Translation differences on assets and liabilities carried at fair value are reported as part of the fair value gain or loss. For example, translation differences on non-monetary assets and liabilities such as equities held at fair value through profit or loss are recognized in profit or loss as part of the fair value gain or loss and translation differences on non-monetary assets such as equities classified as available-for-sale financial assets are recognized in other comprehensive income.

## **2.5 Cash and Cash Equivalents**

Cash and cash equivalents includes cash in hand, deposits held at call with banks, other short-term highly liquid investments with original maturities of three months or less.

## **2.6 Financial Assets**

### *(a) Classification and measurement*

The Company classifies its financial assets into the following categories: financial assets at fair value through profit or loss, available-for-sale financial assets, loans and receivables, and held-to-maturity financial assets. Regular way purchases and sales of financial assets are recognized on trade-date, the date on which the Company commits to purchase or sell the asset.

At initial recognition, the Company measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss. Available-for-sale financial assets and financial assets at fair value through profit or loss are subsequently carried at fair value. And, loans and receivables and held-to-maturity investments are subsequently carried at amortized cost using the effective interest method.

Gains or losses arising from changes in the fair value of financial assets at fair value through profit or loss are recognized in profit or loss within other income or other expenses. Gains or losses arising from changes in the available-for-sale financial assets are recognized in other comprehensive income, and amounts are reclassified to profit or loss when the associated assets are sold or impaired.

### *(b) Impairment*

The Company assesses at the end of each reporting period whether there is objective evidence that a financial asset or a group of financial assets is impaired. A financial asset or a group of financial assets is impaired and impairment losses are incurred only if there is objective evidence of impairment as a result of one or more events that occurred after the initial recognition of the asset (a 'loss event') and that loss event (or events) has an impact on the estimated future cash flows of the financial asset or a group of financial assets that can be reliably estimated.

Impairment of loans and receivables is presented as a deduction in an allowance account, and that of other financial assets is directly deducted from their carrying amount. The Company writes off financial assets when the assets are determined to be no longer recoverable.

The Company considers that there is objective evidence of impairment if significant financial difficulties of the debtor, or delinquency in interest or principal payments for more than 3 months is indicated. Moreover, in the case of equity investments classified as available-for-sale, a significant decline in the fair value of the security below its cost significantly or prolonged decline is considered an objective evidence of impairment.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

*(c) Derecognition*

If a transfer does not result in derecognition because the Company has retained substantially all the risks and rewards of ownership of the transferred asset, the Company continues to recognize the transferred asset in its entirety and recognizes a financial liability for the consideration received. The Company classified the financial liability as 'borrowings' in the statement of financial position (Note 14).

**2.7 Derivative Financial Instruments**

Derivatives are initially recognized at fair value on the date when a derivative contract is entered into and are subsequently re-measured at their fair value at the end of each reporting period. Changes in the fair value of any derivative instrument that does not qualify for hedge accounting are recognized immediately in profit or loss within 'other non-operating income (expenses)' or 'finance income (costs)' based on the nature of transactions.

**2.8 Inventories**

Inventories are stated at the lower of cost and net realizable value. Cost is determined using weighted average cost method, except for goods in transit which is determined using the specific identification method.

**2.9 Assets Held for sale**

Assets are classified as held for sale when their carrying amount will be recovered principally through a sale transaction rather than through continuing use and a sale is considered highly probable. The assets are measured at the lower amount between their carrying amount and the fair value less costs to sell.

**2.10 Property, Plant and Equipment**

Property, plant and equipment are stated at historical cost less accumulated depreciation and accumulated impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Depreciation of all property, plant and equipment, except for land, is calculated using the straight-line method to allocate their cost or revalued amounts, net of their residual values, over their estimated useful lives as follows:

	Useful lives
Buildings	25 - 50 years
Structures	15 - 50 years
Machinery	4 - 15 years
Others	1-6 years

The assets' depreciation method, residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

**2.11 Investment Property**

Investment property is property held to earn rentals or for capital appreciation or both. An investment property is measured initially at its cost. An investment property is measured after initial measurement at depreciated cost (less any accumulated impairment losses.) The Company depreciates investment properties, except for land, using the straight-line method over their useful lives of 25 ~ 50 years.

**2.12 Borrowing Costs**

General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalized during the period of time that is required to complete and prepare the asset for its intended use or sale. Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalization. Other borrowing costs are expensed in the period in which they are incurred.

**2.13 Government Grants**

Grants from the government are recognized at their fair value where there is a reasonable assurance that the grant will be received and the Company will comply with all attached conditions. Government grants related to assets are presented in the statement of financial position by deducting the grant in arriving at the carrying amount of the asset, and government grants related to income are deferred and later deducted from the related expense.

**2.14 Intangible Assets**

Goodwill is recognized as the excess of the aggregate of the consideration transferred and the fair value at acquisition date of the acquirer's previously held equity interest in the acquiree over the identifiable net assets acquired. Goodwill is carried at cost less accumulated impairment losses. Impairment losses on goodwill are not reversed.

Intangible assets, except for goodwill, are initially recognized at its historical cost, and carried at cost less accumulated amortization and accumulated impairment losses.

Development costs that are directly attributable to internally generated by the Company are recognized when the criteria; such as, technically feasible, generate probable future economic benefits and other, are met. Membership rights that have an indefinite useful life are not subject to amortization because there is no foreseeable limit to the period over which the assets are expected to be utilized. The Company amortizes intangible assets with a limited useful life using the straight-line method over the following periods:

	<b>Useful lives</b>
Development costs	3 - 15 years
Industrial property rights	5 - 15 years
Other intangible assets	6 - 20 years



**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

**2.15 Research and Development**

Costs associated with research are recognized as an expense as incurred. Costs that are identifiable, controllable and directly attributable to development projects are recognized as intangible assets when the following criteria are met:

- It is technically feasible to complete the development project so that it will be available for use;
- Management intends to complete the development project for its own use or selling;
- There is an ability to use or sell the development project;
- It can be demonstrated how the development project will generate probable future economic benefits;
- Adequate technical, financial resources and other resources to complete the development and to use or sell the development project are available; and
- The expenditure attributable to the development project during its development can be reliably measured.

Generally, internally generated development projects have the following stages; formulation and selection of a project, verification of idea and technology, development and testing, decision of commercialization, test of final application. Expenditures can be capitalized as intangible assets only after the decision of commercialization. Expenditures incurred in other stages are recognized as expenses on the research phase.

Internally generated development projects in the Life Sciences business have the following stages; formulation of potential candidates, preclinical research, clinical researches such as phase 1, 2 and 3 trials, approval of regulatory body and new product launch. Expenditures incurred from new drug development project are recognized as expensed on the research phase. However, expenditures incurred during clinical phase 1~3 trials from development projects for generic drugs or biosimilars are recognized as intangible assets depending on the nature of the products.

Expenditures incurred from technology license agreement with the third parties are recognized as intangible assets.

Development costs previously recognized as an expense are not recognized as an asset in a subsequent period. Capitalized development costs that are recognized as intangible assets are amortized using the straight-line method over their estimated useful lives when the assets are available for use and are tested for impairment.

**2.16 Impairment of Non-financial Assets**

Goodwill and intangible assets that have an indefinite useful life are not subject to amortization and are tested annually for impairment, or more frequently if events or changes in circumstances indicate that they might be impaired. Other assets are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. Non-financial assets other than goodwill that suffered an impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

**2.17 Financial Liabilities**

*(a) Classification and measurement*

The Company's financial liabilities at fair value through profit or loss are financial instruments held for trading. A financial liability is held for trading if it is incurred principally for the purpose of

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

repurchasing in the near term. A derivative that is not designated as hedging instruments and an embedded derivative that is separated are also classified as held for trading.

The Company classifies non-derivative financial liabilities, except for financial liabilities at fair value through profit or loss, financial guarantee contracts and financial liabilities that arise when a transfer of financial assets does not qualify for derecognition, as financial liabilities carried at amortized cost and present as 'trade payables', 'borrowings', and 'other payables' in the statement of financial position.

*(b) Derecognition*

Financial liabilities are removed from the statement of financial position when it is extinguished; for example, when the obligation specified in the contract is discharged or cancelled or expired or when the terms of an existing financial liability are substantially modified.

**2.18 Financial Guarantee Contracts**

Financial guarantee contracts are recognized as a financial liability at the time the guarantee is issued. The liability is initially measured at fair value, subsequently at the higher of the amount determined in accordance with Korean IFRS 1037 *Provisions, Contingent Liabilities and Contingent Assets* and the amount initially recognized less cumulative amortization in accordance with Korean IFRS1018 *Revenue*, and recognized in the statement of financial position within 'other financial liabilities'.

**2.19 Current and Deferred Tax**

The tax expense for the year consists of current and deferred tax. Current and deferred tax is recognized in profit or loss, except to the extent that it relates to items recognized in other comprehensive income or directly in equity. In this case, the tax is also recognized in other comprehensive income or directly in equity, respectively. The tax expense is measured at the amount expected to be paid to the taxation authorities, using the tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Deferred income tax is provided in full, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements. However, deferred income tax is not accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss.

Deferred tax assets are recognized only if it is probable that future taxable amounts will be available to utilize those temporary differences and losses.

The Company recognizes a deferred tax liability all taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint arrangements, except to the extent that the Company is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. In addition, The Company recognizes a deferred tax asset for all deductible temporary differences arising from such investments to the extent that it is probable the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset where the entity has a legally enforceable right to offset and intends either to settle on a net basis.

## **2.20 Provisions**

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation and the increase in the provision due to passage of time is recognized as interest expense.

## **2.21 Greenhouse Gas Emissions Permits and Obligations**

With enforcement of *The Act on the Allocation and Trading of Greenhouse Gas Emission Permits*, the permits that are received free of charge from the government are measured at zero while permits purchased are measured at acquisition cost and stated net of accumulated impairment loss. Emissions obligations are measured as the sum of the carrying amount of the allocated permits that will be submitted to the government and the best estimate of expenditure required to settle the obligation at the end of reporting period for any excess emission. The permits and emissions obligations are classified as intangible assets and provisions, respectively, in the statement of financial position.

## **2.22 Employee Benefits**

### *(a) Post-employment benefits*

The Company operates both defined contribution and defined benefit pension plans. For defined contribution plans, the Company pays contribution to publicly or privately administered pension insurance plans on mandatory, contractual or voluntary basis. The Company has no further payment obligation once the contribution have been paid. The contribution are recognized as employee benefit expense when they are due.

A defined benefit plan is a pension plan that is not a defined contribution plan. Generally, post-employment benefits are payable after the completion of employment, and the benefit amount depended on the employee's age, periods of service or salary levels. The liability recognized in the statement of financial position in respect of defined benefit pension plans is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid, and that have terms approximating to the terms of the related obligation. Remeasurement gains and losses arising from experience adjustments and changes in actuarial assumptions are recognized in the period in which they occur, directly in other comprehensive income.

Changes in the present value of the defined benefit obligation resulting from plan amendments or curtailments are recognized immediately in profit or loss as past service costs.

### *(b) Other long-term employee benefits*

Certain entities within the Company provide long-term employee benefits that are entitled to employees with service period for ten years and above. The expected costs of these benefits are accrued over the period of employment using the same accounting methodology as used for defined benefit pension plans. The Company recognizes service cost, net interest on other long-term employee benefits and remeasurements as profit or loss for the years. These liabilities are valued annually by an independent qualified actuary.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

**2.23 Revenue Recognition**

Revenue is measured at the fair value of the consideration received or receivable for the sale of goods or rendering of services arising from the normal course of the business. Amounts disclosed as revenue are net of value added taxes, returns, rebates and discounts and after elimination of inter-company transactions.

The Company recognizes revenue when the amount of revenue can be reliably measured, it is probable that future economic benefits will flow to the Company and when specific criteria have been met for each of the Company's activities as described below. The Company bases its estimate on historical results, taking into consideration the type of customer, the type of transaction and the specifics of each arrangement.

*(a) Sales of goods*

Sales of goods are recognized upon delivery of products to customers. The Company recognizes provisions for product warranties and sales returns based on reasonable expectation reflecting warranty obligation and sales return rates incurred historically.

*(b) Interest income*

Interest income is recognized using the effective interest method according to the time passed. When a loan and receivable is impaired, the Company reduces the carrying amount to its recoverable amount and continues unwinding the discount as interest income. Interest income on impaired loans and receivables is recognized using the original effective interest rate.

*(c) Dividend income*

Dividend income is recognized when the right to receive payment is established.

*(d) Royalty income*

Royalty income is recognized on an accrual basis in accordance with the substance of the relevant agreements.

**2.24 Lease**

A lease is an agreement, whereby the lessor conveys to the lessee, in return for a payment or series of payments, the right to use an asset for an agreed period of time. Leases in which a significant portion of the risks and rewards of ownership are not transferred to the Company are classified as operating leases. Payments made under operating leases are charge to profit or loss on a straight-line basis over the period of lease.

Leases where the Company, as lessee, has substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalized at the lease's inception at the fair value of the leased property or, if lower, the present value of the minimum lease payments. The corresponding rental obligations, net of finance charges, are included in other short-term and long-term payables. Each lease payment is allocated between the liability and finance cost.

If the Company is a lessor, a lease is classified as a finance lease if it transfers substantially all the risks and rewards incidental to ownership at the inception of the lease. A lease other than a finance lease is classified as an operating lease. Lease income from operating leases is recognized in income on a straight-line basis over the lease term. Initial direct costs incurred by the lessor in negotiating and arranging an operating lease is added to the carrying amount of the leased asset and recognized as an expense over the lease term on the same basis as the lease

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

income.

### **3. Financial Risk Management**

#### **3.1 Financial risk factors**

The Company's activities expose it to a variety of financial risks: market risk, credit risk and liquidity risk. The Company's overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on the financial performance of the Company. The Company uses derivative financial instruments to hedge certain risk exposures.

Risk management is carried out by the Company's finance team under policies approved by the Corporate Management Committee. The finance team identifies, evaluates and hedges financial risks in close co-operation with the Company's operating units. The Corporate Management Committee reviews and approves written principles for overall risk management, as well as written policies covering specific areas, such as foreign exchange risk, interest rate risk, credit risk, use of derivative financial instruments and non-derivative financial instruments and investment of excess liquidity.

#### **(1) Market risk**

##### **1) Foreign exchange risk**

The Company operates internationally and is exposed to foreign exchange risk arising from foreign currency transactions, primarily with respect to the US dollar. Foreign exchange risk arises from future commercial transactions, recognized assets and liabilities.

Management has set up a policy to require group companies to manage their foreign exchange risk against their functional currency. The Company manages maximum loss for currency risk exposures within acceptable range by using currency risk management model and hires employees who are exclusively responsible for currency risk management.

As at December 31, 2017 and 2016, the Company's monetary assets and liabilities denominated in currencies other than its functional currency, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2017</b>		<b>December 31, 2016</b>	
	<b>Assets</b>	<b>Liabilities</b>	<b>Assets</b>	<b>Liabilities</b>
USD	2,832,426	1,020,174	2,032,309	1,161,129
EUR	352,184	18,644	179,890	82,631
JPY	35,501	100,892	28,495	101,451
CNY and others	74,703	6,627	66,069	6,977

As at December 31, 2017 and 2016, if the Company's functional currency had weakened / strengthened by 10% against the US dollar with all other variables held constant, profit before income tax would have been affected as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2017</b>		<b>December 31, 2016</b>	
	<b>10% Increase</b>	<b>10% Decrease</b>	<b>10% Increase</b>	<b>10% Decrease</b>
USD	181,225	(181,225)	87,118	(87,118)

The above sensitivity analysis has been performed for monetary assets and liabilities denominated in foreign currencies other than the Company's functional currency at the reporting date.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

2) Price risk

The Company is exposed to equity securities price risk arises from investments held by the Company and classified in the separate statement of financial position either as available-for-sale or at fair value through profit or loss. The Company's equity investments are publicly traded and are related to the KOSPI index.

The table below summarizes the impact of increases/decreases of the listed stock price index on the Group's equity before tax effects as at December 31, 2017 and 2016. The analysis is based on the assumption that the equity index has increased/decreased by 10% with all other variables held constant, and that all the Group's equity instruments moved in line with the index.

<i>(in millions of Korean won)</i>	<b>December 31, 2017</b>		<b>December 31, 2016</b>	
	<b>10% Increase</b>	<b>10% Decrease</b>	<b>10% Increase</b>	<b>10% Decrease</b>
KOSPI	553	(553)	1,134	(1,134)

3) Interest rate risk

Interest rate risk is defined as the risk that the interest income or expenses arising from deposits and borrowings will fluctuate because of changes in future market interest rate. The interest rate risk mainly arises on floating rate deposits and borrowings. The objective of interest rate risk management lies in maximizing corporate value by minimizing uncertainty in interest rates fluctuations and net interest expense.

The Company adequately minimizes risks from interest rate fluctuations through various policies, such as sharing excess cash within the Company (internal cash sharing) to minimize external borrowings, avoiding high rate borrowings, reforming capital structure, managing an appropriate ratio of fixed rate borrowings and floating rate borrowings, monitoring a fluctuation of domestic and foreign interest rates daily, weekly and monthly, establishing alternatives, and balancing floating rate short-term borrowings with floating rate deposits.

The table below summarizes the impact of increases/decreases of interest rate on the Company's equity and post-tax profit for the year. The analysis is based on the assumption that the interest rate has increased/decreased by 1% (100 basis points) with all other variables held constant.

<i>(in millions of Korean won)</i>	<b>Impact on post-tax profit</b>		<b>Impact on equity</b>	
	<b>2017</b>	<b>2016</b>	<b>2017</b>	<b>2016</b>
Increase	-	(7,479)	-	(7,479)
Decrease	-	7,479	-	7,479

(2) Credit risk

Credit risk arises from cash and cash equivalents, derivative financial instruments and deposits with banks and financial institutions, as well as credit exposures to wholesale and retail customers, including outstanding receivables and committed transactions.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

The maximum exposure to credit risk as at December 31, 2017 and 2016, is as follows:

*(in millions of Korean won)*

	December 31, 2017		
	Amount before provision	Provision for impairment	Book amount (maximum exposure)
Loans and receivables (excluding cash on hand)	6,275,947	(6,490)	6,269,457
<b>Total</b>	<b>6,275,947</b>	<b>(6,490)</b>	<b>6,269,457</b>

*(in millions of Korean won)*

	December 31, 2016		
	Amount before provision	Provision for impairment	Book amount (maximum exposure)
Loans and receivables (excluding cash on hand)	4,997,792	(6,893)	4,990,899
<b>Total</b>	<b>4,997,792</b>	<b>(6,893)</b>	<b>4,990,899</b>

Details of financial guarantees provided by the Company are disclosed in Notes 3.1.(3) and 18.

The Company has established the following policies and procedures to manage credit risks.

To manage credit risks relating to trade receivables, the Company evaluates the credit rating of customers and determines credit limit for each customer based on the information provided by credit rating agencies and other available financial information before commencing business with customers. The credit risks relating to trade receivables are also mitigated by insurance contracts, collaterals as well as payment guarantees.

The Company has entered into export insurance contracts with Korea Trade Insurance Corporation to mitigate credit risks relating to export trade receivables to overseas customers. The Company is also provided with collaterals by customers depending on their credit rating or payment guarantees from the customers' financial institutions as necessary.

The Company has deposited its cash and cash equivalents, and other long-term deposits in several financial institutions, such as Woori Bank and others. The Company maintains business relationship with those financial institutions with high credit ratings evaluated by independent credit rating agencies and accordingly, credit risks associated with these financial institutions are limited.

### (3) Liquidity risk

The Company monitors rolling forecasts of the Company's liquidity requirements to ensure it has sufficient cash to meet operational needs while maintaining sufficient headroom on its undrawn committed borrowing facilities at all times so that the Company does not breach borrowing limits or covenants (where applicable) on any of its borrowing facilities. The Company's liquidity management policy involves projecting cash flows in major currencies and considering the level of liquid assets necessary to meet these, monitoring balance sheet liquidity ratios against internal and external regulatory requirements and maintaining debt financing plans.

- 1) The table below analyzes the Company's non-derivative financial liabilities into relevant maturity groupings based on the remaining period at the reporting date to the contractual

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

maturity date. Cash flows presented below are gross cash flows before discount, and includes cash flows for interests.

(in millions of Korean won)

	December 31, 2017			
	Less than 1 year	Between 1-2 years	Between 2-5 years	Over 5 years
Borrowings (excluding finance lease liabilities)	153,745	69,027	565,259	290,630
Finance lease liabilities	5,253	5,178	15,532	10,532
Trade and other payables	3,119,992	4,254	1,450	-
<b>Total</b>	<b>3,278,990</b>	<b>78,459</b>	<b>582,241</b>	<b>301,162</b>

(in millions of Korean won)

	December 31, 2016			
	Less than 1 year	Between 1-2 years	Between 2-5 years	Over 5 years
Borrowings (excluding finance lease liabilities)	648,022	-	-	-
Finance lease liabilities	5,000	5,000	15,000	15,000
Trade and other payables	2,040,748	10,194	1,450	-
<b>Total</b>	<b>2,693,770</b>	<b>15,194</b>	<b>16,450</b>	<b>15,000</b>

2) The Company has no derivatives contracts as at December 31, 2017 and 2016.

3) The table below analyzes the Company's financial guarantee contracts into relevant maturity groupings based on the remaining maturity as at the reporting date to the contractual maturity date.

(in millions of Korean won)

	December 31, 2017			
	Less than 1 year	Between 1-2 years	Between 2-5 years	Over 5 years
Financial guarantee contracts <sup>1</sup>	346,808	-	-	-

(in millions of Korean won)

	December 31, 2016			
	Less than 1 year	Between 1-2 years	Between 2-5 years	Over 5 years
Financial guarantee contracts <sup>1</sup>	120,850	-	-	-

<sup>1</sup> The Company has provided financial guarantee for subsidiaries. The amount represented the maximum amount of the guarantee as at December 31, 2017 and 2016, in which the guarantee could be called (Note 18).



**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

**3.2 Capital Risk Management**

The Company's objectives when managing capital are to safeguard the Company's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

Consistent with others in the industry, the Company monitors capital on the basis of the gearing ratio. This ratio is calculated as net debt divided by total capital. Net debt is calculated as total borrowings less cash and cash equivalents. Total capital is calculated as 'equity' as shown in the statement of financial position plus net debt.

The gearing ratios and debt-to-equity ratios at December 31, 2017 and 2016, were as follows:

<i>(in millions of Korean won, except for ratios)</i>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
Total borrowings (Note 14) (A)	1,010,235	681,080
Less: cash and cash equivalents (B)	(1,649,689)	(956,068)
Net debt (C=A+B)	(639,454)	(274,988)
Total liabilities (D)	5,642,604	3,299,563
Total equity (E)	15,505,532	13,476,331
Total capital (F=C+E)	14,866,078	13,201,343
Gearing ratio (C/F)	-	-
Debt-to-equity ratio (D/E)	36.4%	24.5%

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

**3.3 Fair Value**

(1) Carrying amount and fair value of financial instruments by category as at December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2017</b>		<b>December 31, 2016</b>	
	<b>Carrying amount</b>	<b>Fair value</b>	<b>Carrying amount</b>	<b>Fair value</b>
<b>Financial assets (current)</b>				
Cash and cash equivalents	1,649,689	1	956,068	1
Deposits held by financial institutions	500,000	1	710,000	1
Trade receivables	3,781,000	1	3,010,529	1
Other receivables (excluding deposits held by financial institutions)	223,968	1	201,656	1
<b>Financial assets (non-current)</b>				
Deposits held by financial institutions	63,421	1	63,420	1
Other non-current receivables (excluding deposits held by financial institutions)	51,413	1	49,266	1
Other non-current financial assets (carried at cost)	12,621	2	7,169	2
Other non-current financial assets (carried at fair value)	6,062	6,062	11,616	11,616
<b>Financial liabilities (current)</b>				
Trade and other payables	3,119,992	1	2,040,748	1
Current borrowings (excluding finance lease liabilities)	129,922	1	645,922	1
Current finance lease liabilities	5,137	1	4,886	1
Other current financial liabilities	6,374		-	
Other current liabilities (dividends Payable)	-	1	12	1
<b>Financial liabilities (non-current)</b>				
Non-current borrowings (excluding finance lease liabilities)	847,809	841,697	-	-
Non-current lease liabilities	27,367	28,776	30,272	31,411
Other non-current payables	5,704	1	11,644	1

<sup>1</sup> These financial assets and liabilities are not included in the disclosure above as their carrying amount is a reasonable approximation of their fair values.

<sup>2</sup> All other non-current financial assets of the Company consist of available-for-sale equity securities. Certain equity securities are measured at cost (2017: ₩12,621 million, 2016: ₩7,169 million) as the range of reasonable fair value estimates is significant and the probabilities of the various estimates cannot be reasonably assessed. These are not included in the disclosure above (Note 8). The Company does not have any plans to dispose of these available-for-sale equity securities in the near future.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

(2) Fair value for measurement and disclosure are determined based on the following method:

1) Financial liabilities (non-current)

Fair values of financial liabilities (non-current) are based on cash outflows discounted using Korean won currency note yield in the same credit grade with the Company (AA+), and the applied discount rates as at December 31, 2017 and 2016, are as follows:

<i>(in percentage)</i>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
Discount rate	1.95%~2.90%	1.63%~2.57%

(3) Fair Value Hierarchy

Items that are measured at fair value or for which the fair value is disclosed are categorized by the fair value hierarchy levels, and the defined levels are as follows:

- Quoted prices (unadjusted) in active markets for identical assets or liabilities (Level 1).
- Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (that is, prices) or indirectly (that is, derived from prices) (Level 2).
- Inputs for the asset or liability that are not based on observable market data (that is, unobservable inputs) (Level 3).

Fair value hierarchy classifications of the financial instruments that are measured at fair value or its fair value is disclosed as at December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2017</b>			
	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Total</b>
<b>Financial assets/liabilities measured at fair value</b>				
Other non-current financial assets (carried at fair value)	6,062	-	-	6,062
<b>Financial assets/liabilities not measured at fair value</b>				
Non-current borrowings (excluding finance lease liabilities)	-	841,697	-	841,697
Non-current finance lease liabilities	-	28,776	-	28,776

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>			
	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Total</b>
<b>Financial assets/liabilities measured at fair value</b>				
Other non-current financial assets (carried at fair value)	11,616	-	-	11,616
<b>Financial assets/liabilities not measured at fair value</b>				
Non-current finance lease liabilities	-	31,411	-	31,411

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

**4. Critical Accounting Estimates and Assumptions**

The preparation of financial statements requires the Company makes estimates and assumptions concerning the future. The estimates and judgments are continuously evaluated with consideration to factors such as events reasonably predictable in the foreseeable future within the present circumstance according to historical experience. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are addressed below.

**(1) Estimated impairment of goodwill**

The Company tests whether goodwill has suffered any impairment on an annual basis. The recoverable amount of a cash generating unit (CGU) is determined based on value-in-use calculations (Note 12).

**(2) Income taxes**

The Company recorded, based on its best estimate, current taxes and deferred taxes that the Company will be liable in the future for the operating results as at the financial year end. However, the final tax outcome in the future may be different from the amounts that were initially recorded. Such differences will impact the current and deferred tax assets and liabilities in the period in which such determination is made (Note 28).

If certain portion of the taxable income is not used for investments or increase in wages or dividends in accordance with the *Tax System For Recirculation of Corporate Income*, the Company is liable to pay additional income tax calculated based on the tax laws. The new tax system is effective for three years from 2015. Accordingly, the measurement of current and deferred income tax is affected by the tax effects from the new tax system. As the Company's income tax is dependent on the investments, increase in wages and dividends, there is an uncertainty measuring the final tax effects.

**(3) Provisions**

The Company recognizes provisions for product warranties and estimated returns as explained in Note 15. These provisions are estimated based on past experience.

**(4) Net defined benefit liability**

The present value of net defined benefit liability depends on a number of factors that are determined on an actuarial basis using a number of assumptions including the discount rate (Note 16).

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

**5. Financial Instruments by Category**

Categorizations of financial instruments as at December 31, 2017 and 2016, are as follows:

*(in millions of Korean won)*

Financial assets	December 31, 2017			
	Loans and receivables	Financial assets at fair value through profit or loss	Available-for-sale financial assets	Total
Cash and cash equivalents	1,649,689	-	-	1,649,689
Trade receivables	3,781,000	-	-	3,781,000
Other receivables	723,968	-	-	723,968
Other non-current receivables	114,834	-	-	114,834
Other non-current financial assets	-	-	18,683	18,683
<b>Total</b>	<b>6,269,491</b>	<b>-</b>	<b>18,683</b>	<b>6,288,174</b>

*(in millions of Korean won)*

Financial liabilities	December 31, 2017			
	Financial liabilities at fair value through profit or loss	Financial liabilities at amortized cost	Other financial liabilities <sup>1</sup>	Total
Trade payables	-	1,397,841	-	1,397,841
Other payables	-	1,722,151	-	1,722,151
Borrowings (current)	-	129,922	5,137	135,059
Other current financial liabilities	-	-	6,374	6,374
Other non-current payables	-	5,704	-	5,704
Borrowings (non-current)	-	847,809	27,367	875,176
<b>Total</b>	<b>-</b>	<b>4,103,427</b>	<b>38,878</b>	<b>4,142,305</b>

*(in millions of Korean won)*

Financial assets	December 31, 2016			
	Loans and receivables	Financial assets at fair value through profit or loss	Available-for-sale financial assets	Total
Cash and cash equivalents	956,068	-	-	956,068
Trade receivables	3,010,529	-	-	3,010,529
Other receivables	911,656	-	-	911,656
Other non-current receivables	112,686	-	-	112,686
Other non-current financial assets	-	-	18,785	18,785
<b>Total</b>	<b>4,990,939</b>	<b>-</b>	<b>18,785</b>	<b>5,009,724</b>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

(in millions of Korean won)

	December 31, 2016			
<b>Financial liabilities</b>	<b>Financial liabilities at fair value through profit or loss</b>	<b>Financial liabilities at amortized cost</b>	<b>Other financial liabilities<sup>1</sup></b>	<b>Total</b>
Trade payables	-	1,091,037	-	1,091,037
Other payables	-	949,711	-	949,711
Borrowings (current)	-	199,955	450,853	650,808
Other current liabilities (dividends payable)	-	12	-	12
Other non-current payables	-	11,644	-	11,644
Borrowings (non-current)	-	-	30,272	30,272
<b>Total</b>	<b>-</b>	<b>2,252,359</b>	<b>481,125</b>	<b>2,733,484</b>

<sup>1</sup> Other financial liabilities are financial liabilities that are not subject to the categorizations such as finance lease liabilities and financial liabilities related to transfer transactions not qualified for derecognition.

Net gains or losses on each category of financial instruments for the years ended December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

	<b>2017</b>	<b>2016</b>
<b>Financial instruments at fair value through profit or loss</b>		
Loss on valuation/disposal (profit or loss)	-	(1,501)
<b>Hedging derivatives</b>		
Gain on disposal	170	-
<b>Available-for-sale financial assets</b>		
Gain on disposal	-	18
Dividend income	331	-
<b>Loans and receivables</b>		
Interest income	22,382	34,185
Gain (loss) on foreign currency translation	(70,445)	67,067
Loss on foreign exchange	(204,388)	(20,974)
<b>Financial liabilities measured at amortized cost</b>		
Interest expense	(23,866)	(16,312)
Gain (loss) foreign currency translation	24,708	(18,213)
Gain (loss) on foreign exchange	52,933	(13,980)
<b>Other financial liabilities</b>		
Interest expense	(5,413)	(11,794)
Loss foreign currency translation	-	(20,277)
Gain on foreign exchange	64,653	5,046

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

**6. Cash and Cash Equivalents**

Details of cash and cash equivalents as at December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
Bank deposits and cash on hand	90,323	28,025
Deposits held by financial institutions and others	1,559,366	928,043
<b>Total</b>	<b>1,649,689</b>	<b>956,068</b>

**7. Trade and Other Receivables**

Trade and other receivables and its provisions for impairment, as at December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2017</b>		
	<b>Gross amount</b>	<b>Provision for impairment</b>	<b>Carrying amount</b>
Trade receivables <sup>1</sup>	3,786,531	(5,531)	3,781,000
Other current receivables	724,927	(959)	723,968
Other non-current receivables <sup>2</sup>	114,834	-	114,834
<b>Total</b>	<b>4,626,292</b>	<b>(6,490)</b>	<b>4,619,802</b>

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>		
	<b>Gross amount</b>	<b>Provision for impairment</b>	<b>Carrying amount</b>
Trade receivables <sup>1</sup>	3,017,091	(6,562)	3,010,529
Other current receivables	911,987	(331)	911,656
Other non-current receivables <sup>2</sup>	112,686	-	112,686
<b>Total</b>	<b>4,041,764</b>	<b>(6,893)</b>	<b>4,034,871</b>

<sup>1</sup> As at December 31, 2017 and 2016, trade receivables transferred to financial institutions have been accounted for as a collateralized borrowing and financial assets not fully derecognized are as follows (Note 14):

<i>(in millions of Korean won)</i>	<b>Loans and receivables (trade receivables collateralized borrowings)</b>	
	<b>December 31, 2017</b>	<b>December 31, 2016</b>
Carrying amount of transferred assets	-	445,967
Carrying amount of related liabilities	-	(445,967)

<sup>2</sup> As at December 31, 2017, ₩21 million in other non-current receivables represents deposits which are restricted from withdrawal in connection with maintaining checking accounts (2016: ₩20 million).

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Details of other receivables as at December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Current</b>		
Non-trade receivables	182,785	162,479
Deposits held by financial institutions	500,000	710,000
Accrued income	3,862	3,712
Loans	-	9,856
Guarantee deposits provided	37,321	25,609
	<u>723,968</u>	<u>911,656</u>
<b>Non-current</b>		
Non-trade receivables	4,246	-
Deposits held by financial institutions <sup>1</sup>	63,421	63,420
Loans	548	-
Guarantee deposits provided	46,619	49,266
	<u>114,834</u>	<u>112,686</u>
<b>Total</b>	<u>838,802</u>	<u>1,024,342</u>

<sup>1</sup> As at December 31, 2017, ₩ 63,400 million (2016: ₩ 63,400 million) is restricted from being withdrawn in relation to large, small and medium-sized companies cooperation agreement and others.

The aging analysis of trade and other receivables as at December 31, 2017 and 2016, is as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2017</b>		<b>December 31, 2016</b>	
	<b>Trade receivables</b>	<b>Other receivables</b>	<b>Trade receivables</b>	<b>Other receivables</b>
<b>Receivables not past due</b>	<u>3,751,427</u>	<u>831,787</u>	<u>2,986,931</u>	<u>1,023,572</u>
<b>Past due but not impaired</b>				
Up to 3 months	31,037	6,944	21,644	91
Between 3-6 months	164	71	-	671
Over 6 months	12	-	250	8
	<u>31,213</u>	<u>7,015</u>	<u>21,894</u>	<u>770</u>
<b>Impaired receivables</b>	<u>3,891</u>	<u>959</u>	<u>8,266</u>	<u>331</u>
	<u>3,786,531</u>	<u>839,761</u>	<u>3,017,091</u>	<u>1,024,673</u>



**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Movements on the provision for impairment of trade and other receivables for the years ended December 31, 2017 and 2016, are as follows:

*(in millions of Korean won)*

	<b>2017</b>			
	<b>Trade receivables</b>		<b>Other receivables</b>	
	<b>Current</b>	<b>Non-current</b>	<b>Current</b>	<b>Non-current</b>
<b>Beginning balance</b>	6,562	-	331	-
Business combination (Note 34)	1,985	-	-	-
Additions	-	-	628	-
Write-off	(275)	-	-	-
Reversals	(2,741)	-	-	-
<b>Ending balance</b>	<b>5,531</b>	<b>-</b>	<b>959</b>	<b>-</b>

*(in millions of Korean won)*

	<b>2016</b>			
	<b>Trade receivables</b>		<b>Other receivables</b>	
	<b>Current</b>	<b>Non-current</b>	<b>Current</b>	<b>Non-current</b>
<b>Beginning balance</b>	5,304	-	331	-
Business combination (Note 34)	-	-	-	-
Additions	3,177	-	-	-
Write-off	(1,919)	-	-	-
Reversals	-	-	-	-
<b>Ending balance</b>	<b>6,562</b>	<b>-</b>	<b>331</b>	<b>-</b>

As at December 31, 2017 and 2016, the carrying amounts of trade and other receivables are approximation of their fair values.

**8. Other Financial Assets and Liabilities**

Details of other financial assets and liabilities as at December 31, 2017 and 2016, are as follows:

*(in millions of Korean won)*

	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Other financial assets</b>		
Available-for-sale financial assets	18,683	18,785
Less: current portion	-	-
	<b>18,683</b>	<b>18,785</b>
<b>Other financial liabilities</b>		
Financial guarantee contracts	6,374	-
Less: current portion	(6,374)	-
	<b>-</b>	<b>-</b>

Changes in available-for-sale financial assets for the years ended December 31, 2017 and 2016, are as follows:

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
<b>Beginning balance</b>	18,785	13,813
Business combination (Note 34)	2,447	-
Acquisitions / Transfer	3,001	2,603
Disposals	-	(23)
Gain (loss) on valuation (before income tax effects)	(5,550)	2,392
<b>Ending balance</b>	<b>18,683</b>	<b>18,785</b>

Available-for-sale financial assets consist of equity securities. The certain unlisted equity securities are measured at cost as the range of reasonable fair value estimates is wide and the probabilities of the various estimates cannot be reasonably assessed.

No impairment losses on available for sale financial assets were recognized for the years ended December 31, 2017 and 2016.

**9. Inventories**

Details of inventories as at December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2017</b>		
	<b>Gross amount</b>	<b>Valuation allowance</b>	<b>Carrying amount</b>
Merchandise	35,913	(840)	35,073
Finished / Semi-finished products	1,305,550	(71,255)	1,234,295
Work-in-process	9,852	-	9,852
Raw materials	552,590	(5,711)	546,879
Supplies	96,950	-	96,950
Materials-in-transit	151,506	-	151,506
<b>Total</b>	<b>2,152,361</b>	<b>(77,806)</b>	<b>2,074,555</b>

<i>(in millions of Korean won)</i>	<b>December 31, 2016</b>		
	<b>Gross amount</b>	<b>Valuation allowance</b>	<b>Carrying amount</b>
Merchandise	56,350	(1,438)	54,912
Finished / Semi-finished products	1,106,274	(59,780)	1,046,494
Work-in-process	785	-	785
Raw materials	457,588	(3,695)	453,893
Supplies	72,748	-	72,748
Materials-in-transit	146,179	-	146,179
<b>Total</b>	<b>1,839,924</b>	<b>(64,913)</b>	<b>1,775,011</b>

During the year, the cost of inventories recognized as expense and included in 'cost of sales' amounted to ₩12,331,304 million (2016: ₩9,924,433 million).

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

**10. Investments in Subsidiaries, Associates and Joint ventures**

Changes in investments in subsidiaries, associates and joint ventures for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Beginning balance	2,154,357	1,261,028
Business combination (Note 34)	3,977	-
Additions / Transfer	536,161	953,268
Impairment <sup>1</sup>	(19,383)	-
Disposals	-	(59,939)
Others <sup>2</sup>	(19,499)	-
Ending balance	<u>2,655,613</u>	<u>2,154,357</u>

<sup>1</sup>The Company reviews whether there are any events or changes in circumstances indicate that assets might be impaired at the end of each reporting period. If the indications are present, the recoverable amount of that asset is estimated by future cashflow discount method or other method. If the recoverable amount is less than its carrying amount, the carrying amount of the asset shall be reduced and the impairment loss shall be recognized.

During 2017, the amount of impairment loss recognized as other non-operating expenses and key assumptions used for calculation of value in use are as follows:

<i>(in millions of Korean won and in percentage)</i>	<b>December 31, 2017</b> <b>LG Fuel Cell Systems Inc.</b>
Impaired amount	19,383
Pre-tax discount rate	12.08%
Growth rate for subsequent years after five years	1.00%

<sup>2</sup>The carrying amount of LG Holdings (HK) Ltd., associates, was reduced due to a capital reduction with consideration during 2017.

Details of investments in subsidiaries, associates and joint ventures as at December 31, 2017 and 2016, are as follows:

(in millions of Korean won and in percentage)	Location	Percentage of ownership (%)		Carrying amount	
		December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Subsidiaries					
Ningbo LG Yongxing Chemical Co.,Ltd.	China	75	75	135,908	135,908
LG Chem HK Ltd.	Hong Kong	100	100	11,159	11,159
LG Chem America, Inc.	USA	100	100	3,620	3,620
LG Chemical India Pvt. Ltd.	India	100	100	54,929	54,929
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	China	100	100	21,911	21,911
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd. <sup>1</sup>	China	81	81	617,887	379,725
LG Chem (Taiwan), Ltd.	Taiwan	100	100	18	18
LG Chem Display Materials (Beijing) Co.,Ltd.	China	90	90	13,444	13,444

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Tianjin LG Bohai Chemical Co.,Ltd. <sup>2</sup>	China	68	68	77,871	77,871
Tianjin LG BOTIAN Chemical Co.,Ltd. <sup>2</sup>	China	41	41	9,550	9,550
LG Chem (China) Investment Co.,Ltd. <sup>3</sup>	China	100	100	140,696	87,255
LG Chem (Tianjin) Engineering Plastics Co.,Ltd.	China	90	90	14,733	14,733
LG Chem Europe GmbH	Germany	100	100	3,085	3,085
LG Chem Poland Sp. z o.o.	Poland	100	100	26,948	26,948
LG Chem Michigan Inc.	USA	100	100	63,422	63,422
LG Chem Power Inc.	USA	100	100	19,553	19,553
LGC Petrochemical India Private Limited.	India	100	100	299	299
HAENGBOKNURI CO.,LTD.	Korea	100	100	600	600
LG CHEM TK Kimya SANAYI VE TIC. Ltd. STI.	Turkey	100	100	174	174
LG Chem Japan Co.,Ltd.	Japan	100	100	1,406	1,406
LG NanoH2O, Inc.	USA	100	100	143,195	143,195
NanoH2O (Jiangsu) Water Processing Technology Co., Ltd.	China	100	100	6,400	6,400
Nanjing LG Chem New Energy Battery Co.,Ltd. <sup>4</sup>	China	50	50	88,706	32,624
LG Chem (Chongqing) Engineering Plastics Co., Ltd. <sup>5</sup>	China	100	100	37,410	9,269
LG Chem Wroclaw Energy sp. z o.o. <sup>6</sup>	Poland	100	100	138,575	10,468
LG Chem(HUIZHOU) Petrochemical Co., Ltd.	China	70	70	99,001	99,001
LG Chem Hai Phong Vietnam Co.,Ltd. <sup>7</sup>	Vietnam	100	-	3,079	-
LG Chem Austrailia Pty Ltd. <sup>8</sup>	Australia	100	-	429	-
FarmHannong Co.,Ltd. <sup>8</sup>	Korea	100	100	724,500	724,500
LG Life Sciences India Pvt. Ltd. <sup>9</sup>	India	100	-	2,170	-
LG Life Sciences (Beijing) Co., Ltd. <sup>9</sup>	China	100	-	1,233	-
LG Life Sciences (Thailand) Ltd. <sup>9</sup>	Thailand	100	-	431	-
Sarangnuri Ltd. <sup>9</sup>	Korea	100	-	126	-
				<u>2,462,468</u>	<u>1,951,067</u>
<b>Associates</b>					
LG Holdings (HK) Ltd.	Hong Kong	26	26	58,036	77,535
TECWIN Co.,Ltd.	Korea	21	21	2,861	2,861
LG Chem BRASIL INTERMEDIACAO DE NEGOCIOS DO SETOR QUIMICO LTDA. <sup>10</sup>	Brazil	100	100	579	579
LG Chem Malaysia SDN.BHD. <sup>10</sup>	Malaysia	100	100	150	150
LG Fuel Cell Systems Inc. <sup>11</sup>	USA	23	22	53,370	48,226
FJ Composite Material Co., Ltd. <sup>12</sup>	Japan	33	-	3,015	-
WUXI CL New Energy Technology Ltd. <sup>13</sup>	China	30	-	1,178	-
LG Life Sciences Poland Ltd. <sup>9,10</sup>	Poland	100	-	17	-
				<u>119,206</u>	<u>129,351</u>
<b>Joint ventures</b>					
LG Vina chemical Co.,Ltd.	Vietnam	40	40	1,313	1,313
HL Greenpower Co.,Ltd.	Korea	49	49	14,210	14,210
SEETEC Co.,Ltd.	Korea	50	50	58,416	58,416
				<u>73,939</u>	<u>73,939</u>
<b>Total</b>				<u>193,145</u>	<u>203,290</u>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

- <sup>1</sup> During the year, the Company acquired additional shares of LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd. for ₩238,162 million.
- <sup>2</sup> As at December 31, 2017, Tianjin LG Bohai Chemical Co., Ltd. owns 20.30% of Tianjin LG Botian Chemical Co.,Ltd.'s shares.
- <sup>3</sup> During the year, the Company acquired additional shares of LG Chem (China) Investment Co.,Ltd. for ₩53,441 million.
- <sup>4</sup> Although the Company owns less than 50% of the voting rights of Nanjing LG Chem New Energy Battery Co.,Ltd., the Company is considered to have control over the investee, as the Company can exercise the majority voting rights in its decision-making process in accordance with the shareholders' agreement. During the year, the Company acquired additional shares of Nanjing LG Chem New Energy Battery Co.,Ltd. for ₩56,082 million.
- <sup>5</sup> During the year, the Company acquired additional shares of LG Chem (Chongqing) Engineering Plastics Co., Ltd. for ₩28,141 million.
- <sup>6</sup> During the year, the Company acquired additional shares of LG Chem Wroclaw Energy sp. z o.o. for ₩128,107 million.
- <sup>7</sup> LG Chem Hai Phong Vietnam Co.,Ltd. was established during the year, and the Company newly acquired 100% of shares of LG Chem Hai Phong Vietnam Co.,Ltd. for ₩3,079 million.
- <sup>8</sup> LG Chem Austrailia Pty Ltd. was established during the year, and the Company newly acquired 100% of shares of LG Chem Austrailia Pty Ltd. for ₩429 million.
- <sup>9</sup> The Company acquired shares of associates and subsidiaries held by LG Life Sciences, Ltd. as LG Life Sciences, Ltd. was merged into the Company during the year.
- <sup>10</sup> Classified as an investment in associate due to its small size.
- <sup>11</sup> During the year, the Company acquired additional shares of LG Fuel Cell Systems Inc. for ₩24,527 million. The Company recognized impairment loss of ₩19,383 million as 'other non-operating expenses' during the year, due to the difference between the recoverable amounts of investments in LG Fuel Cell Systems Inc. and its carrying amount.
- <sup>12</sup> The Company newly acquired 33.25% of shares of FJ Composite Material Co., Ltd. for ₩ 3,015 million during the year.
- <sup>13</sup> The Company newly acquired 30% of shares of WUXI CL New Energy Technology Ltd. for ₩ 1,178 million during the year.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

**11. Property, Plant and Equipment**

Changes in property, plant and equipment for the years ended December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

2017											
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Equipment	Others	Construction -in-progress	Machinery -in-transit	Total
<b>Beginning balance</b>	981,921	1,689,257	553,182	3,208,156	7,543	281,782	67,460	100,361	352,369	26,194	7,268,225
Cost	1,018,849	2,138,763	970,513	9,865,322	37,094	790,264	246,788	238,907	358,907	26,194	15,691,601
Accumulated depreciation	-	(421,435)	(413,525)	(6,626,250)	(29,431)	(499,102)	(177,916)	(138,098)	-	-	(8,305,757)
Accumulated impairment	(36,928)	(28,071)	(3,806)	(30,916)	(120)	(9,380)	(1,412)	(448)	(6,538)	-	(117,619)
Business combination (Note 34)	62,738	81,276	6,590	108,953	184	8,195	2,796	-	164,722	57,392	492,846
Acquisitions/ Transfer	37,779	465,385	36,981	487,603	8,057	128,613	31,422	41,655	1,597,609	133,175	2,968,279
Disposals/ Transfer	-	(1,255)	(524)	(7,923)	(5)	(3,444)	(579)	-	(1,178,904)	(74,475)	(1,267,109)
Depreciation	-	(50,340)	(38,959)	(701,606)	(3,521)	(95,518)	(25,246)	(66,915)	-	-	(982,105)
Impairment	-	(745)	(3,039)	(96,828)	(39)	(6,142)	(695)	(1,704)	(31,048)	-	(140,240)
Reversal of impairment	-	6,836	1,194	3,721	2	797	91	-	-	-	12,641
Transfer to assets held for sale (Note 35)	-	-	-	(3,036)	-	(1,396)	(17)	-	-	-	(4,449)
<b>Ending balance</b>	<b>1,082,438</b>	<b>2,190,414</b>	<b>555,425</b>	<b>2,999,040</b>	<b>12,221</b>	<b>312,887</b>	<b>75,232</b>	<b>73,397</b>	<b>904,748</b>	<b>142,286</b>	<b>8,348,088</b>
Cost	1,119,390	2,683,007	1,013,720	10,243,349	35,764	895,714	271,536	211,584	942,202	142,286	17,558,552
Accumulated depreciation	-	(470,547)	(452,658)	(7,127,238)	(23,422)	(569,981)	(194,332)	(136,035)	-	-	(8,974,213)
Accumulated impairment	(36,952)	(22,046)	(5,637)	(117,071)	(121)	(12,846)	(1,972)	(2,152)	(37,454)	-	(236,251)

(in millions of Korean won)

2016											
	Land	Buildings	Structures	Machinery	Vehicles	Tools	Equipment	Others	Construction -in-progress	Machinery -in-transit	Total
<b>Beginning balance</b>	901,910	1,655,584	548,791	3,509,385	9,271	255,942	64,573	135,436	338,370	10,537	7,429,799
Cost	903,777	2,045,520	934,250	9,526,360	35,865	694,831	228,592	281,556	373,906	10,537	15,035,194
Accumulated depreciation	-	(377,548)	(382,190)	(6,010,371)	(26,482)	(430,130)	(162,711)	(146,120)	-	-	(7,535,552)
Accumulated impairment	(1,867)	(12,388)	(3,269)	(6,604)	(112)	(8,759)	(1,308)	-	(35,536)	-	(69,843)
Business combination (Note 34)	1,702	21,890	2,197	61,068	451	2,291	562	-	-	-	90,161
Acquisitions/ Transfer	78,503	76,662	42,331	367,516	1,217	116,330	26,516	30,984	706,478	55,261	1,501,798
Disposals/ Transfer	(194)	(5,003)	(102)	(6,680)	(8)	(2,464)	(290)	-	(686,371)	(39,604)	(740,716)
Depreciation	-	(44,144)	(39,498)	(696,515)	(3,380)	(89,350)	(23,098)	(65,611)	-	-	(961,596)
Impairment	-	(15,732)	(537)	(24,933)	(8)	(805)	(344)	(448)	(6,108)	-	(48,915)
Transfer to assets held for sale (Note 35)	-	-	-	(1,685)	-	(162)	(459)	-	-	-	(2,306)
<b>Ending balance</b>	<b>981,921</b>	<b>1,689,257</b>	<b>553,182</b>	<b>3,208,156</b>	<b>7,543</b>	<b>281,782</b>	<b>67,460</b>	<b>100,361</b>	<b>352,369</b>	<b>26,194</b>	<b>7,268,225</b>
Cost	1,018,849	2,138,763	970,513	9,865,322	37,094	790,264	246,788	238,907	358,907	26,194	15,691,601
Accumulated depreciation	-	(421,435)	(413,525)	(6,626,250)	(29,431)	(499,102)	(177,916)	(138,098)	-	-	(8,305,757)
Accumulated impairment	(36,928)	(28,071)	(3,806)	(30,916)	(120)	(9,380)	(1,412)	(448)	(6,538)	-	(117,619)

During the year, the Company capitalized ₩7,081 million of borrowing costs (2016: ₩3,529 million) which recognized from borrowings in relation to acquisition of property, plant and equipment, on property, plant and equipment. The capitalization rate of borrowings used to determine the amount of borrowing costs eligible for capitalization is 2.44% (2016: 1.92%).

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Line items including depreciation in the separate statements of profit or loss for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Cost of sales	894,304	886,467
Selling and administrative expenses	85,619	74,609
Others	2,182	520
<b>Total</b>	<b>982,105</b>	<b>961,596</b>

Details of property, plant and equipment classified as a finance lease as at December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2017</b>		<b>December 31, 2016</b>	
	<b>Machinery</b>	<b>Construction-in-progress</b>	<b>Machinery</b>	<b>Construction-in-progress</b>
Cost- capitalized finance leases	43,274	1,275	42,669	-
Accumulated depreciation	(12,952)	-	(8,534)	-
Net book amount	<b>30,322</b>	<b>1,275</b>	<b>34,135</b>	<b>-</b>

The Company leases machinery and construction-in-progress under non-cancellable finance lease agreements. The lease terms are 3~10 years and the contracts include an agreement that the ownership of the assets is transferred by the end of the lease term.

The Company reviews annually whether there is any indication that an asset may be impaired. During 2017 and 2016, Glass Substrate business, a CGU in IT & Electronic materials and Advanced materials segment, was tested for impairment as its economic performance was lower than expected. During 2017, certain equipment in LED Encap business, a CGU in IT & Electronic materials and Advanced materials segment, were tested for reversal of impairment as the future economic performance of OLED material division was estimated to exceed the previous expectation due to a transfer of LED Encap business to OLED material compound process.

The amount of (reversal of) impairment loss recognized as other non-operating (income) expenses and key assumptions used for calculation of value in use for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>		<b>2016</b>
	<b>Glass Substrate<sup>1</sup></b>	<b>LED Encap</b>	<b>Glass Substrate</b>
<b>(Reversal of) Impaired amount</b>			
Property, plant and equipment	124,138	(11,320)	47,699
Intangible assets	2,345	(6)	535
<b>Key assumptions</b>			
Pre-tax discount rate	N/A	12.3%	9.5%
Growth rate for subsequent years exceeding five years	N/A	-%	-%

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

<sup>1</sup>The recoverable amount is calculated based on fair value less costs to sell and it is a non-recurring fair value measured by an observable transaction price. It is categorized as level 2 of the fair value hierarchy.

The Company decided to dispose of certain assets during 2017 and 2016. The differences between the fair value and carrying amount were recognized as impairment losses (Note 35).

## 12. Intangible Assets

Changes in intangible assets for the years ended December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

	2017					
	Development costs	Industrial property rights	Goodwill	Memberships	Others	Total
<b>Beginning balance</b>	73,749	189,958	37,527	50,433	45,786	397,453
Business combination (Note 34)	53,913	12,714	686,229	3,723	203,097	959,676
Separate acquisitions/ Transfer	62,484	46,439	-	1,542	30,042	140,507
Additions – internal development	13,361	-	-	-	-	13,361
Disposals/ Transfer	(8,086)	(55)	-	(4,409)	(138)	(12,688)
Amortization	(29,941)	(17,887)	-	-	(28,437)	(76,265)
Impairment	(1,350)	(868)	-	(1,133)	(153)	(3,504)
Reversal of impairment	6	-	-	-	-	6
Transfer to assets held for sale (Note 35)	-	(358)	-	-	-	(358)
<b>Ending balance</b>	<u>164,136</u>	<u>229,943</u>	<u>723,756</u>	<u>50,156</u>	<u>250,197</u>	<u>1,418,188</u>

(in millions of Korean won)

	2016					
	Development costs	Industrial property rights	Goodwill	Memberships	Others	Total
<b>Beginning balance</b>	58,514	156,837	33,415	48,950	40,137	337,853
Business combination (Note 34)	344	8,328	4,112	-	4,968	17,752
Separate acquisitions/ Transfer	45,648	38,802	-	2,309	12,301	99,060
Additions – internal development	-	-	-	-	-	-
Disposals/ Transfer	(10,087)	(804)	-	(826)	(57)	(11,774)
Amortization	(20,325)	(13,051)	-	-	(11,527)	(44,903)
Impairment	(345)	(154)	-	-	(36)	(535)
<b>Ending balance</b>	<u>73,749</u>	<u>189,958</u>	<u>37,527</u>	<u>50,433</u>	<u>45,786</u>	<u>397,453</u>

Line items including amortization of intangible assets for the years ended December 31, 2017 and 2016, as follows:



**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

(in millions of Korean won)

	2017	2016
Cost of sales	15,509	10,899
Selling and administrative expenses	60,756	34,004
<b>Total</b>	<b>76,265</b>	<b>44,903</b>

The Company recognized total research and development costs of ₩791,500 million (2016: ₩608,040 million) as expenses.

Changes in greenhouse gas emission permits for the years ended December 31, 2017 and 2016, are as follows:

(in thousands of tons  
and millions of  
Korean won)

	2017					
	2016		2017		Total	
	Quantity	Amount	Quantity	Amount	Quantity	Amount
<b>Beginning balance</b>	6,145	-	6,442	-	12,587	-
Allocation with nil consideration	350	-	726	-	1,076	-
Purchase	250	5,133	873	18,635	1,123	23,768
Business combination	24	-	25	-	49	-
Carry forward between years	700	-	(700)	-	-	-
Surrendered to the government	(7,469)	(5,133)	-	-	(7,469)	(5,133)
<b>Ending balance</b>	<b>-</b>	<b>-</b>	<b>7,366</b>	<b>18,635</b>	<b>7,366</b>	<b>18,635</b>

(in thousands of tons  
and millions of  
Korean won)

	2016							
	2015		2016		2017		Total	
	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
<b>Beginning balance</b>	6,772	-	6,581	-	6,442	-	19,795	-
Allocation with nil consideration	(7)	-	-	-	-	-	(7)	-
Carry forward between years	436	-	(436)	-	-	-	-	-
Surrendered to the government	(7,201)	-	-	-	-	-	(7,201)	-
<b>Ending balance</b>	<b>-</b>	<b>-</b>	<b>6,145</b>	<b>-</b>	<b>6,442</b>	<b>-</b>	<b>12,587</b>	<b>-</b>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Goodwill is allocated to the Company's CGUs identified for each operating segment. The carrying amounts of goodwill allocation by CGUs as at December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

CGUs	December 31, 2017				Total
	Acquisition of LG Petrochemical Co., Ltd	Acquisition of SAP business	Acquisition of PSAA business	Merger of LG Life Sciences, Ltd,	
<b>Basic materials&amp; Chemicals</b>					
NCC	2,639	-	-	-	2,639
ABS	1,472	-	-	-	1,472
PO	1,054	-	-	-	1,054
PVC	808	-	-	-	808
Acrylic	350	25,222	-	-	25,572
Plasticizer	53	-	-	-	53
BPA	467	-	-	-	467
Others	1,350	-	-	-	1,350
<b>IT &amp; Electronic materials and Advanced materials</b>					
PSAA	-	-	4,112	-	4,112
<b>Life Sciences</b>					
Life sciences	-	-	-	686,229	686,229
<b>Total</b>	<b>8,193</b>	<b>25,222</b>	<b>4,112</b>	<b>686,229</b>	<b>723,756</b>

(in millions of Korean won)

CGUs	December 31, 2016			Total
	Acquisition of LG Petrochemical Co., Ltd	Acquisition of SAP business	Acquisition of PSAA business	
<b>Basic materials&amp; Chemicals</b>				
NCC	3,020	-	-	3,020
ABS	1,484	-	-	1,484
PO	1,059	-	-	1,059
PVC	502	-	-	502
Acrylic	493	25,222	-	25,715
Plasticizer	95	-	-	95
BPA	162	-	-	162
Others	1,378	-	-	1,378
<b>IT &amp; Electronic materials and Advanced materials</b>				
PSAA	-	-	4,112	4,112
<b>Total</b>	<b>8,193</b>	<b>25,222</b>	<b>4,112</b>	<b>37,527</b>

The recoverable amounts of CGUs have been determined based on value-in-use calculations. These calculations use pre-tax cash flow projections based on financial budgets approved by management covering a five-year period. Management determined the estimated pre-tax cash flow based on past performance and its expectations of market development. Value-in-use is measured by applying the pre-tax discount rates reflecting specific risks relating to the relevant operating segments.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

During 2017, key assumptions used for calculation of value in use are as follows:

(in millions of Korean won)

	<b>2017</b>	
	<b>Pre-tax discount rate</b>	<b>Growth rate for subsequent years after five years</b>
Acquisition of LG Petrochemical Co., Ltd.	10.1%	0.0%
Acquisition of SAP business	10.0%	0.0%
Acquisition of PSAA business	10.8%	0.0%
Merger of LG Life Sciences	10.0%	3.0%

The Company did not recognize impairment loss on goodwill as the carrying amounts of the cash generating units did not exceed the recoverable amounts.

**13. Other Current and Non-current Assets**

Details of other current and non-current assets as at December 31, 2017 and 2016, consist of:

(in millions of Korean won)

	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Current</b>		
Prepayments to suppliers and prepaid expense	39,290	72,296
Prepaid value added tax	83,433	47,412
Others	21,150	9,446
<b>Total</b>	<b>143,873</b>	<b>129,154</b>
<b>Non-current</b>		
Long-term prepayments and prepaid expenses	66,393	6,869
Others	-	10,826
<b>Total</b>	<b>66,393</b>	<b>17,695</b>

**14. Borrowings**

Borrowings as at December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Current</b>		
Short-term borrowings	-	445,967
Current-portion of long-term borrowings of bank loans	129,922	199,955
Finance lease liabilities	5,137	4,886
	<b>135,059</b>	<b>650,808</b>
<b>Non-current</b>		
Debentures	847,809	-
Finance lease liabilities	27,367	30,272
	<b>875,176</b>	<b>30,272</b>
<b>Total</b>	<b>1,010,235</b>	<b>681,080</b>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Details of short-term borrowings as at December 31, 2017 and 2016, are as follows:

(in millions of Korean won)	Bank	Latest maturity date	Annual interest rate (%) as at December 31, 2017	Carrying Amount	
				December 31, 2017	December 31, 2016
Notes discounted <sup>1</sup> (Negotiable notes)	-	-	-	-	445,967

<sup>1</sup> As at December 31, 2017, trade receivables transferred to financial institutions but not derecognized are accounted for as collateralized borrowing transaction (Note 7).

Details of debentures as at December 31, 2017 and 2016, are as follows:

(in millions of Korean won)		December 31, 2017				
	Financial institution	Annual interest rate (%)	Latest maturity date	Amount in Korean won	Current	Non-current
47 <sup>th</sup> Debenture (non-guaranteed/private)	Government Employees Pension Service and others	3.20	2018.04.30	30,000	30,000	-
48 <sup>th</sup> Debenture (non-guaranteed/public)	NH Investment & Securities Co., Ltd. and others	3.77	2019.02.21	50,000	-	50,000
49 <sup>th</sup> Debenture (non-guaranteed/private)	KB Asset Management Co., Ltd and others	2.82	2018.12.12	100,000	100,000	-
50-1 <sup>st</sup> Debenture (non-guaranteed/public)	NH Investment & Securities Co., Ltd. and others	1.95	2020.05.19	120,000	-	120,000
50-2 <sup>nd</sup> Debenture (non-guaranteed/public)	NH Investment & Securities Co., Ltd. and others	2.28	2022.05.19	400,000	-	400,000
50-3 <sup>rd</sup> Debenture (non-guaranteed/public)	NH Investment & Securities Co., Ltd. and others	2.53	2024.05.19	280,000	-	280,000
Less: discount on debentures				(2,269)	(78)	(2,191)
<b>Total</b>				<b>977,731</b>	<b>129,922</b>	<b>847,809</b>

(in millions of Korean won)		December 31, 2016				
	Financial institution	Annual interest rate (%)	Latest maturity date	Amount in Korean won	Current	Non-current
Debentures in Korean won	Woori Securities	4.11	2017.03.29	200,000	200,000	-
Less: discount on debentures				(45)	(45)	-
<b>Total</b>				<b>199,955</b>	<b>199,955</b>	<b>-</b>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Details of finance lease liabilities as at December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

Leaser	December 31, 2017				
	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current
Hyundai Oil Bank	3.12	2024.12.31	31,226	4,886	26,340
Others	3.7~4.13	2023.12.31	1,278	251	1,027
<b>Total</b>			<b>32,504</b>	<b>5,137</b>	<b>27,367</b>

(in millions of Korean won)

Leaser	December 31, 2016				
	Annual interest rate (%)	Latest maturity date	Total amount	Current	Non-current
Hyundai Oil Bank and others	3.12	2024.12.31	35,158	4,886	30,272

The present value of finance lease liabilities as at December 31, 2017 and 2016, is as follows:

(in millions of Korean won)

	December 31, 2017			December 31, 2016		
	Minimum lease payments	Future finance costs	Present value	Minimum lease payments	Future finance costs	Present value
Within 1 year	5,253	116	5,137	5,000	114	4,886
Between 1-5 years	20,710	2,006	18,704	20,000	1,902	18,098
Over 5 years	10,532	1,869	8,663	15,000	2,826	12,174

## 15. Provisions

Changes in the carrying amount of provisions for the years ended December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

	2017					
	Sales returns <sup>1</sup>	Warranty <sup>2</sup>	Greenhouse gas emission <sup>3</sup>	Legal claims <sup>4</sup>	Restoration <sup>5</sup>	Total
<b>Beginning balance</b>	6,386	35,348	27,801	7,894	800	78,229
Business combination (Note 34)	5,994	-	59	-	-	6,053
Additions	50,255	42,252	342	72,187	2,720	167,756
Used	(50,179)	(8,951)	(5,133)	(61,275)	(662)	(126,200)
<b>Ending balance</b>	12,456	68,649	23,069	18,806	2,858	125,838
Less : current portion	(12,456)	(4,138)	(23,069)	-	-	(39,663)
<b>Total</b>	-	64,511	-	18,806	2,858	86,175

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

(in millions of Korean won)

	2016					
	Sales returns <sup>1</sup>	Warranty <sup>2</sup>	Greenhouse gas emission <sup>3</sup>	Legal claims <sup>4</sup>	Restoration <sup>5</sup>	Total
<b>Beginning balance</b>	5,288	24,987	3,720	-	-	33,995
Business combination (Note 34)	-	-	-	-	800	800
Additions	32,353	16,225	31,498	30,368	-	110,444
Used	(31,255)	(5,864)	(7,417)	(22,474)	-	(67,010)
<b>Ending balance</b>	6,386	35,348	27,801	7,894	800	78,229
Less : current portion	(6,386)	(1,056)	(27,801)	-	-	(35,243)
<b>Total</b>	-	34,292	-	7,894	800	42,986

<sup>1</sup> Sales return provisions have been accrued for the estimated sales return determined based on historical experience.

<sup>2</sup> Warranty provisions have been accrued for the estimated warranty service costs to be incurred based on the terms of warranty and historical experience.

<sup>3</sup> Greenhouse gas emission provisions have been accrued for estimated expenditures to be obligated for any excess emission. The estimated emission for the year ended December 31, 2017, amounts to 7,631 thousand tons (2016: 7,547 thousand tons).

<sup>4</sup> Lawsuit provisions have been accrued for certain pending cases.

<sup>5</sup> Restoration provisions have been accrued based on the estimated expenses to restore land pollutions.

## 16. Net Defined Benefit Liability

Details of net defined benefit liabilities recognized in the statements of financial position as at December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

	December 31, 2017	December 31, 2016
Present value of defined benefit obligations <sup>1</sup>	994,826	830,340
Fair value of plan assets	(846,272)	(783,950)
<b>Liability in the separate statement of financial position</b>	<b>148,554</b>	<b>46,390</b>

<sup>1</sup> The present value of retirement benefit obligations is net of existing contributions to the National Pension Plan of ₩806 million as at December 31, 2017 (2016: ₩765 million).

The amounts recognized in the separate statements of profit or loss for the years ended December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

	2017	2016
Current service cost <sup>1</sup>	129,744	114,031
Interest cost	1,806	2,183
<b>Total, included in employee benefit expenses</b>	<b>131,550</b>	<b>116,214</b>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

<sup>1</sup> The above amounts excluded ₩826 million (2016: ₩71 million) of expenses capitalized to construction in progress and development costs.

Post-employment benefits recognized for defined contribution plan for the year ended December 31, 2017, amounted to ₩3,225 million (2016: ₩2,395 million).

Post-employment benefits recognized in the separate statements of profit or loss for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Cost of sales	91,740	81,868
Selling and administrative expenses	43,035	36,741
<b>Total</b>	<b>134,775</b>	<b>118,609</b>

Movements in the present value of defined benefit obligations for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
<b>Beginning balance</b>	830,340	715,343
Business combination (Note 34)	69,600	5,048
Transfer in	7,466	10,301
Transfer out	(2,278)	(5,763)
Current service cost	130,570	114,102
Interest expense	25,214	19,466
Remeasurements:		
Actuarial loss from change in demographic assumptions	4,100	3,731
Actuarial loss from change in financial assumptions	(38,397)	(11,941)
Actuarial gain from experience adjustments	30,069	24,400
Others	1,060	3,718
Payments from plans	(62,918)	(48,065)
<b>Ending balance</b>	<b>994,826</b>	<b>830,340</b>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Movements in the fair value of plan assets for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
<b>Beginning balance</b>	783,950	636,266
Business combination (Note 34)	57,771	4,010
Transfer in	-	1,383
Transfer out	(504)	-
Interest income	23,408	17,283
Remeasurements:		
Return on plan assets (excluding amounts included in interest income)	(7,309)	(4,296)
Contributions:		
Employers	45,000	160,000
Payments from plans	(55,132)	(29,761)
Administrative costs	(912)	(935)
<b>Ending balance</b>	<b>846,272</b>	<b>783,950</b>

The actual return on plan assets for the year ended December 31, 2017, was ₩ 16,099 million (2016: ₩ 12,987 million).

The significant actuarial assumptions as at December 31, 2017 and 2016, are as follows:

	<b>December 31, 2017</b>	<b>December 31, 2016</b>
Discount rate	3.1%	2.9%
Salary growth rate	5.0%	5.1%

The sensitivity analysis for changes in key actuarial assumptions as at December 31, 2017, is as follows:

<i>(in millions of Korean won)</i>	<b>Increase by 1%</b>	<b>Decrease by 1%</b>
Discount rate:		
Increase (decrease) in defined benefit obligations	(102,850)	123,384
Salary growth rate:		
Increase (decrease) in defined benefit obligations	119,962	(102,232)

A decrease in corporate bond yields may lead most significantly to an increase in defined benefit liabilities.

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. The sensitivity of the defined benefit obligation to changes in principal actuarial assumptions is calculated using the projected unit credit method, the same method applied when calculating the defined benefit obligations recognized on the statement of financial position.



**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

The methods and types of assumptions used in preparing the sensitivity analysis did not change compared to the prior period.

Plan assets as at December 31, 2017 and 2016, consist of:

(in millions of Korean won)	December 31, 2017				December 31, 2016			
	Quoted price	Unquoted price	Total	Composition	Quoted price	Unquoted price	Total	Composition
Insurance contracts with guaranteed yield	846,272	-	846,272	100%	783,950	-	783,950	100%

As at December 31, 2017, the weighted average duration of defined benefit obligation is 11.97 years.

The Company reviews the funding level on an annual basis and has a policy of eliminating deficit from the fund. Expected contributions to post-employment benefit plans for the year ending December 31, 2018, are ₩292,779 million.

## 17. Other Current and Non-current Liabilities

Details of other current and non-current liabilities as at December 31, 2017 and 2016, are as follows:

(in millions of Korean won)	December 31, 2017	December 31, 2016
<b>Current</b>		
Advances from customers	471,067	48,548
Dividends payable	-	12
Withholding	76,294	56,035
Unearned revenues	7,426	3,914
Accrued expenses	229,156	104,334
<b>Total</b>	<b>783,943</b>	<b>212,843</b>
<b>Non-current</b>		
Long-term accrued expenses	43,983	29,508
Long-term unearned revenues	24,236	-
<b>Total</b>	<b>68,219</b>	<b>29,508</b>

## 18. Commitments and Contingencies

- (1) As at December 31, 2017, the Company has been guaranteed from the Seoul Guarantee Insurance for the execution of contracts and others.
- (2) As at December 31, 2017, the Company has provided one blank promissory note to the Korea National Oil Corporation as collateral in relation to petroleum import surcharges.
- (3) As at December 31, 2017, the Company has bank overdraft agreements with several banks for up to ₩69,100 million and US \$50 million, and has entered into contracts with several financial institutions, for discounting notes from export for up to US\$1,475 million, and for letters of credit for up to ₩ 32,000 million and US\$ 384 million, and for the guaranteed payments in foreign currency for up to US\$ 60 million. The Company also has comprehensive line of credit agreements with several financial institutions for up to ₩20,000 million and US\$55 million.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

- (4) As at December 31, 2017, the Company has B2B purchase arrangements with several financial institutions amounting to ₩ 349,000 million.
- (5) As at December 31, 2017, in relation to price fixing of mobile batteries, the consumers in U.S., Canada and Israel have filed three class actions and the customers have filed four separate actions against the Company. However, the ultimate outcome of these cases cannot be determined at the reporting date.
- (6) In addition, as at December 31, 2017, the Company have been named as a plaintiff in 14 legal actions involving ₩22,516 million, and as a defendant in 11 legal actions with ₩ 57,447 million. The ultimate outcome of these cases cannot be determined at the reporting date.
- (7) As at December 31, 2017, the Company has technology license agreements with STYRON EUROPE GmbH and other companies for the production of Polycarbonate products. Further, the Company has entered into manufacture and production technical contracts with Exxon Mobile and others.
- (8) The Company has entered into a license agreement with LG Corp. to use trademarks on the products that the Company manufactures and sells, and on the services the Company provides in relation to its business.
- (9) As at December 31, 2017, the Company has contracts of US\$ 1 million and EUR 5 million in guarantees with financial institutions in regard to warranty for certain products.
- (10) As at December 31, 2017, the Company has guaranteed the repayment of various obligations of its subsidiaries. The outstanding balance of such guarantees as at December 31, 2017, amounts to ₩346,808 million (2016: ₩120,850 million). Details of guarantees provided as at December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

Guarantee beneficiary	Financial institution	Guarantee period	Amount of guarantee		Outstanding loan amount	
			December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
LG Chem Michigan, Inc.	Mizuho Bank	2014.05.27~2017.05.27	-	72,510	-	66,468
"	SMBC	2014.03.31~2017.03.31	-	24,170	-	24,170
"	Wells Fargo	2015.08.18~2017.08.18	-	24,170	-	18,128
LG Chem Wroclaw						
Energy sp. z o.o.	Citibank	2017.07.31~2020.04.06	38,298	-	38,298	-
"	"	2017.07.28~2018.07.27	25,532	-	-	-
"	BNP	2017.09.27~2019.12.13	19,151	-	19,151	-
"	ING	2017.09.01~2022.09.01	63,829	-	63,829	-
FarmHannong Co.,Ltd.	Creditors	2017.02.16~2020.02.16	100,000	-	100,000	-
"	"	2017.02.16~2022.02.16	100,000	-	100,000	-
<b>Total</b>			<b>346,810</b>	<b>120,850</b>	<b>321,278</b>	<b>108,766</b>

In addition, the Company provides Letters of Comfort (LOC) in relation to certain borrowings of subsidiaries.

Further, as at December 31, 2017, the Company provided no financial guarantee to its associates in relation to their borrowings.

- (11) Capital expenditure arrangement that has not incur at the end of the reporting period is as follows:

(in millions of Korean won)

	December 31, 2017	December 31, 2016
Property, plant and equipment	1,268,079	300,963

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

(12) The Company has entered into operating lease agreements for offices, equipment, ports and others. Most of the agreements will be terminated within a year.

**19. Share Capital**

Changes in share capital and share premium for the years ended December 31, 2017 and 2016, are as follows:

*(in millions of Korean won and in shares)*

	Ordinary shares		Preferred shares		Share premium
	Number of shares	Share capital	Number of shares	Share capital	
January 1, 2016	66,271,100	331,356	7,628,921	38,144	897,840
December 31, 2016	66,271,100	331,356	7,628,921	38,144	897,840
Share issuance due to business combination	4,321,243	21,606	59,879	300	1,116,614
December 31, 2017	70,592,343	352,962	7,688,800	38,444	2,014,454

Changes in treasury shares for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	Number of shares		Carrying amount	Gain on disposal of treasury shares
	Ordinary shares	Preferred shares		
January 1, 2016	359,795	5,519	15,484	13,855
December 31, 2016	359,795	5,519	15,484	13,855
Purchase of treasury shares due to business combination	1,284,891	10,328	337,211	-
Acquisition of fractional shares due to business combination	7,730	520	2,250	-
December 31, 2017	1,652,416	16,367	354,945	13,855

**20. Retained Earnings**

Retained earnings as at December 31, 2017 and 2016, consist of:

<i>(in millions of Korean won)</i>	December 31, 2017	December 31, 2016
Legal reserve <sup>1</sup>	184,750	184,750
Discretionary reserve <sup>2</sup>	11,401,525	10,408,337
Retained earnings before appropriation	1,602,220	1,361,243
<b>Total</b>	<b>13,188,495</b>	<b>11,954,330</b>

<sup>1</sup> The Commercial Code of the Republic of Korea requires the Company to appropriate for each financial period, as a legal reserve, an amount equal to a minimum of 10% of cash dividends paid until such reserve equals 50% of its issued share capital. The reserve is not available for cash dividends payment, but may be transferred to share capital or used to reduce accumulated deficit. When the accumulated legal reserves (the sum of capital reserves and earned profit reserves) are greater than 1.5 times the paid-in capital amount, the excess legal reserves may be distributed in accordance with a resolution of the shareholders' meeting.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

<sup>2</sup> The Company separately accumulates a discretionary reserve for research and human resource development through appropriation of retained earnings, which has been included as deductible expense for the corporate income tax return according to the Special Tax Treatment Law. The reserve could be reversed in accordance with the terms of related tax laws.

**21. Other Components of Equity**

Details of other components of equity as at December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
Treasury shares (Note 19)	(354,945)	(15,484)

**22. Selling and Administrative Expenses**

Selling and administrative expenses for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Wages and salaries	571,176	395,698
Post-employment benefits (Note 16)	43,035	36,741
Employee benefits	95,910	73,610
Travel expense	37,764	30,910
Water & utilities	34,256	29,922
Packaging expenses	6,323	5,985
Rental expenses	84,035	73,247
Commission expenses	391,798	323,205
Depreciation (Note 11)	85,619	74,609
Advertising expense	25,485	17,096
Freight expenses	404,303	338,026
Training expense	16,569	12,986
Amortization (Note 12)	60,756	34,004
Sample expense	13,021	11,141
Development costs	156,639	139,587
Others	191,083	137,958
<b>Total</b>	<b>2,217,772</b>	<b>1,734,725</b>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

**23. Breakdown of Expenses by Nature**

Cost of sales, and selling and administrative expenses by nature for the years ended December 31, 2017 and 2016, consist of:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Changes in inventories of merchandise, finished goods, semi-finished goods and work in process	(98,893)	(46,005)
Raw materials and consumables used	11,213,911	9,002,724
Purchase of merchandise	1,216,286	967,714
Employee benefit expenses (Note 24)	1,794,299	1,393,152
Advertising expenses	26,801	18,310
Freight expenses	428,773	361,354
Commission expenses	550,909	450,544
Depreciation and amortization	1,056,188	1,005,979
Operating lease payments	51,280	46,009
Other expenses	2,347,453	2,251,819
<b>Total</b>	<b>18,587,007</b>	<b>15,451,600</b>

**24. Employee Benefit Expenses**

Details of employee benefit expenses for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Salaries	1,524,019	1,169,235
Post-employment benefits – Defined benefit plan (Note 16)	131,550	116,214
Post-employment benefits – Defined contribution plan (Note 16)	3,225	2,395
Others	135,505	105,308
<b>Total</b>	<b>1,794,299</b>	<b>1,393,152</b>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

**25. Finance Income and Costs**

Details of finance income and costs for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
<b>Finance income</b>		
Interest income <sup>1</sup>	22,382	34,185
Dividend income	71,229	76,364
Gain on foreign exchange	131,573	123,609
Gain on foreign currency translation	3,692	6
Gain on disposal of available-for-sale securities	-	18
Gain on disposal of trading derivatives	-	1,640
Gain on valuation of trading derivatives	170	-
<b>Total</b>	<b>229,046</b>	<b>235,822</b>
<b>Finance costs</b>		
Interest expense <sup>2</sup>	22,198	24,577
Loss on foreign exchange	196,450	119,383
Loss on foreign exchange translations	1,908	950
Loss on disposal of trading derivatives	-	3,141
<b>Total</b>	<b>220,556</b>	<b>148,051</b>

<sup>1</sup> Details of interest income for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Deposits held by financial institutions	21,828	33,499
Other loans and receivables	554	686
<b>Total</b>	<b>22,382</b>	<b>34,185</b>

<sup>2</sup> Details of interest expense for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Interest on bank overdraft and borrowings	7,988	14,715
Interest on finance lease liabilities	1,578	1,186
Interest on debentures	19,713	12,205
Capitalized interest for qualifying assets	(7,081)	(3,529)
<b>Total</b>	<b>22,198</b>	<b>24,577</b>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

**26. Other Non-Operating Income**

Details of other non-operating income for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Gain on foreign exchange	267,003	353,002
Gain on foreign currency translation	26,432	70,160
Gain on disposal of property, plant and equipment	11,256	5,556
Reversal of impairment loss on property, plant and equipment (Note 11)	12,641	-
Gain on disposal of investments in joint ventures	-	4,015
Others	45,550	28,736
<b>Total</b>	<b>362,882</b>	<b>461,469</b>

**27. Other Non-operating Expenses**

Details of other non-operating expenses for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Loss on foreign exchange	288,928	387,136
Loss on foreign currency translation	73,953	40,639
Loss on disposal of property, plant and equipment	12,565	14,587
Loss on disposal of intangible assets	2,208	1,342
Impairment loss on property, plant and equipment (Note 11)	140,240	48,915
Impairment loss on intangible assets (Note 12)	3,504	535
Donations	34,528	27,976
Others	108,040	97,281
<b>Total</b>	<b>663,966</b>	<b>618,411</b>

**28. Tax Expense and Deferred Tax**

Details of income tax expense as at December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Current tax on profit for the year	558,316	399,308
Adjustments in respect of prior years	(19,362)	(10,617)
Deferred tax movement in temporary differences	(138,030)	(32,191)
Deferred tax - change in tax rate	(16,776)	-
Deferred tax - credit carryforwards	8,599	2,707
	<b>392,747</b>	<b>359,207</b>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Deferred tax charged directly to equity	1,527	(580)
Current tax charged directly to equity	1,138	5,858
Income tax expense	<u>395,412</u>	<u>364,485</u>

The aggregate current and deferred tax charged directly to equity (other comprehensive income) for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
<b>Current tax</b>		
Remeasurements of net defined benefits liabilities	1,138	5,858
<b>Deferred tax</b>		
Loss on valuation of available-for-sale financial assets	1,527	(580)
<b>Total</b>	<u>2,665</u>	<u>5,278</u>

Movements in deferred tax assets (liabilities) for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>				
	<b>Increase (decrease)</b>				
	<b>Beginning balance</b>	<b>Business combination</b>	<b>Profit (loss) for the year</b>	<b>Other comprehensive income</b>	<b>Ending balance</b>
Defined benefit liability	192,101	15,483	54,992	-	262,576
Plan assets	(189,433)	(13,965)	(29,326)	-	(232,724)
Reserve for research and human resources development	(56,467)	-	38,133	-	(18,334)
Provision for impairment on receivables	17	-	237	-	254
Property, plant and equipment	24,124	405	31,698	-	56,227
Investments in subsidiaries, associates and joint ventures	(1,046)	-	-	-	(1,046)
Accrued income	(899)	(3)	(160)	-	(1,062)
Others	43,181	(29,548)	57,705	1,526	72,864
	11,578	(27,628)	153,279	1,526	138,755
Tax credit carryforwards	9,352	8,123	(8,599)	-	8,876
Deferred income tax assets (liabilities)	<u>20,930</u>	<u>(19,505)</u>	<u>144,680</u>	<u>1,526</u>	<u>147,631</u>



**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

(in millions of Korean won)

	2016			
	Beginning balance	Increase (decrease)		Ending balance
		Profit for the year	Other comprehensive income	
Defined benefit liability	162,162	29,939	-	192,101
Plan assets	(151,902)	(37,531)	-	(189,433)
Reserve for research and human resources development	(116,160)	59,693	-	(56,467)
Provision for impairment on receivables	624	(607)	-	17
Property, plant and equipment	8,082	16,042	-	24,124
Investments in subsidiaries, associates and joint ventures	38,534	(39,580)	-	(1,046)
Accrued income	(1,907)	1,008	-	(899)
Others	39,954	3,807	(580)	43,181
	(20,613)	32,771	(580)	11,578
Tax credit carryforwards	12,059	(2,707)	-	9,352
Deferred income tax assets (liabilities)	(8,554)	30,064	(580)	20,930

The reconciliations between income tax expense and accounting profit for the years ended December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

	2017	2016
<b>Profit before income tax expense</b>	<u>2,000,635</u>	<u>1,744,074</u>
<b>Tax at domestic tax rates applicable</b>	483,692	421,605
<b>Tax effects of:</b>		
Income not subject to tax	(4,084)	(8,883)
Expenses not deductible for tax purposes	226,500	7,256
Unrecognized deferred income tax for temporary differences in the current year	(161,858)	4,246
Tax credit	(92,786)	(64,833)
Effects of change in tax rate	(16,776)	-
Others	(39,276)	5,094
<b>Income tax expense</b>	<u>395,412</u>	<u>364,485</u>
Effective tax rate (income tax expense/ profit before income tax)	<u>19.76%</u>	<u>20.90%</u>

Realization of deferred tax assets is dependent on the Group's ability to generate future taxable profits in excess of the profits arising from the reversal of taxable temporary differences, and economic and industry outlooks. Management periodically reviews on these factors.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Details of deductible (taxable) temporary differences unrecognized as deferred tax assets (liabilities) as at December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Investment in subsidiaries, associates and joint ventures	228,320	211,503
Land	488	-
Goodwill	(694,422)	(8,193)
<b>Total</b>	<b>(465,614)</b>	<b>203,310</b>

**29. Earnings per Share**

Basic earnings per share is calculated by dividing the profit attributable to by the weighted average number of ordinary shares outstanding during the financial year excluding treasury shares. As at the reporting date, the Company has no potential ordinary shares. Preferred shares have a right to participate in the profits of the Company. These participation rights have been considered in presenting the EPS for ordinary shares and preferred shares.

Basic earnings per share for the years ended December 31, 2017 and 2016, is computed as follows:

**Basic earnings per ordinary share**

<i>(in millions of Korean won and in number of shares)</i>	<b>2017</b>	<b>2016</b>
Profit attributable to ordinary shares <sup>1</sup>	1,442,828	1,236,224
Weighted average number of ordinary shares outstanding <sup>2</sup>	68,940,266	65,911,305
Basic earnings per ordinary share (in won)	<b>20,929</b>	<b>18,756</b>

**Basic earnings per preferred share**

<i>(in millions of Korean won and in number of shares)</i>	<b>2017</b>	<b>2016</b>
Profit attributable to preferred shares <sup>1</sup>	162,395	143,365
Weighted average number of preferred shares outstanding <sup>2</sup>	7,672,456	7,623,402
Basic earnings per preferred share (in won)	<b>21,166</b>	<b>18,806</b>

<sup>1</sup> Profit attributable to ordinary and preferred shares are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
<b>Profit for the year</b>	1,605,223	1,379,589
Ordinary shares dividends (A)	329,557	296,601
Preferred shares dividends (B)	38,498	34,686
<b>Undistributed earnings for the year</b>	1,237,168	1,048,302
Undistributed earnings available for ordinary shares (C)	1,113,271	939,623

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Undistributed earnings available for preferred shares (D)	123,897	108,679
<b>Profit for the year attributable to ordinary shares (A+C)</b>	<b>1,442,828</b>	<b>1,236,224</b>
<b>Profit for the year attributable to preferred shares (B+D)</b>	<b>162,395</b>	<b>143,365</b>

<sup>2</sup> Weighted average numbers of shares are calculated as follows:

Ordinary shares outstanding	Period	2017		
		Number of shares	Number of days	Number of shares x days
Beginning balance	2017.1.1 ~ 2017.12.31	65,911,305	365	24,057,626,325
Share issuance due to a business combination	2017.1.1 ~ 2017.12.31	4,321,243	365	1,577,253,695
Purchase of treasury shares	2017.1.1 ~ 2017.12.31	(1,284,891)	365	(468,985,215)
Purchase of treasury shares	2017.1.17 ~ 2017.12.31	(7,730)	349	(2,697,770)
<b>Total</b>				<b>25,163,197,035</b>

Weighted average number of ordinary shares outstanding: 25,163,197,035 / 365 = 68,940,266 shares

Preferred shares outstanding	Period	2017		
		Number of shares	Number of days	Number of shares x days
Beginning balance	2017.1.1 ~ 2017.12.31	7,623,402	365	2,782,541,730
Share issuance due to a business combination	2017.1.1 ~ 2017.12.31	59,879	365	21,855,835
Purchase of treasury shares	2017.1.1 ~ 2017.12.31	(10,328)	365	(3,769,720)
Purchase of treasury shares	2017.1.17 ~ 2017.12.31	(520)	349	(181,480)
<b>Total</b>				<b>2,800,446,365</b>

Weighted average number of preferred shares outstanding: 2,800,446,365 / 365 = 7,672,456 shares

Ordinary shares outstanding	Period	2016		
		Number of shares	Number of days	Number of shares x days
Beginning balance	2016. 1. 1 ~ 2016.12.31	65,911,305	366	24,123,537,630
<b>Total</b>				<b>24,123,537,630</b>

Weighted average number of ordinary shares outstanding: 24,123,537,630 / 366 = 65,911,305 shares

Preferred shares outstanding	Period	2016		
		Number of shares	Number of days	Number of shares x days
Beginning balance	2016. 1. 1 ~ 2016.12.31	7,623,402	366	2,790,165,132
<b>Total</b>				<b>2,790,165,132</b>

Weighted average number of preferred shares outstanding: 2,790,165,132 / 365 = 7,623,402 shares

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

There were no dilutive potential outstanding ordinary shares at the reporting date. Accordingly, diluted earnings per share of the Company is identical to basic earnings per share.

**30. Dividends**

Details of dividends for the years ended December 31, 2017 and 2016, are as follows:

	2017	2016
Number of shares entitled to dividends: shares issued and outstanding (par value per share: ₩5,000)		
Ordinary shares	68,939,927	65,911,305
Preferred shares	7,672,433	7,623,402
Dividend per share ( <i>in Korean won, %</i> )		
Ordinary shares: cash	6,000(120%)	5,000(100%)
Preferred shares: cash	6,050(121%)	5,050(101%)
Cash dividends to distribute ( <i>in millions of Korean won</i> )		
Ordinary shares	413,640	329,557
Preferred shares	46,418	38,498
	<u>460,058</u>	<u>368,055</u>

Dividend payout ratios for the years ended December 31, 2017 and 2016, are as follows:

( <i>in millions of Korean won</i> )	2017	2016
Dividends (A)	460,058	368,055
Profit attributable to the ordinary equity holders of the Parent Company (B)	1,605,223	1,379,589
Dividend payout ratio (A/B)	<u>28.66%</u>	<u>26.68%</u>

Dividend yield ratios for the years ended December 31, 2017 and 2016, are as follows:

	2017		2016	
( <i>in Korean won</i> )	Ordinary shares	Preferred Shares	Ordinary shares	Preferred Shares
Dividend per share (A)	6,000	6,050	5,000	5,050
Market value at the end of year (B) <sup>1</sup>	393,625	245,375	264,700	180,600
Dividend yield ratio (A/B)	<u>1.52%</u>	<u>2.47%</u>	<u>1.89%</u>	<u>2.80%</u>

<sup>1</sup> Average price in the stock market during the week preceding the two business days before the record date of the shareholders' list for the general meeting of shareholders related to above dividends.

# LG Chem, Ltd.

## Notes to the Separate Financial Statements

### December 31, 2017 and 2016

---

#### 31. Related Party Transactions

As at December 31, 2017 and 2016, LG Corp. is an entity exercising a significant influence over the Company as it owns 33.34% of the Company's ordinary shares.

Details of other related parties that have sales and other transactions with the Company or have receivables and payables balances, other than consolidated subsidiaries, associates and joint ventures (Note 10), as at December 31, 2017 and 2016, are as follows:

Related party	Related party's subsidiary (domestic)	Related parties' subsidiary (overseas)	Details
SERVEONE	-	-	Subsidiary of LG Corp.
LG CNS Co., Ltd.	LG N-Sys, Inc. and others	LG CNS America Inc. and others	Subsidiary of LG Corp.
LG Siltron Incorporated	-	-	Subsidiary of LG Corp.
LG Management Development Institute	-	-	Subsidiary of LG Corp.
LG SPORTS Ltd.	-	-	Subsidiary of LG Corp.
LG Holdings Japan	-	-	-
LG MMA Corporation	-	-	Joint venture of LG Corp.
LG Display Co., Ltd.	-	LG Display Yantai Co., Ltd. and others	LG Enterprise GROUP <sup>1</sup>
LG Electronics, Inc.	LG Innotek Co., Ltd. and others	Inspur LG Digital Mobile Communications Co., Ltd. and others	LG Enterprise GROUP <sup>1</sup>
LG International Corp.	Pantos Logistics Co., Ltd. and others	LG International (Japan) Ltd. and others	LG Enterprise GROUP <sup>1</sup>
LG Hausys, Ltd.	-	LG Hausys Tianjin Co., Ltd. and others	LG Enterprise GROUP <sup>1</sup>
LG Household & Health Care Ltd.	Coca-Cola Beverage Co.	-	LG Enterprise GROUP <sup>1</sup>
LG Life Sciences Ltd. <sup>2</sup>	-	-	LG Enterprise GROUP <sup>1</sup>
LG Uplus Corp.	-	-	LG Enterprise GROUP <sup>1</sup>
G II R Inc.	HS AD Inc.	-	LG Enterprise GROUP <sup>1</sup>
Silicon Works Co., Ltd.	-	-	LG Enterprise GROUP <sup>1</sup>

<sup>1</sup> Although the entity is not the related party of the Company in accordance with Korean IFRS 1024, the entity belongs to a large enterprise group in accordance with the Monopoly Regulation and Fair Trade Act.

<sup>2</sup> On January 1, 2017, LG Life Science Ltd. was merged into the Company.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Sales and purchases with related parties for the years ended December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

		2017		
		Purchase and others		
	Sales and others	Purchase of raw materials /merchandises	Acquisition of property, plant and equipment and intangible assets	Others
<b>Entity with a significant influence over the Company</b>				
LG Corp.	11	-	-	62,919
<b>Subsidiaries</b>				
Ningbo LG Yongxing Chemical Co.,Ltd.	108,098	4,204	-	1,367
LG Chem HK Ltd.	220,257	-	-	515
LG Chem America, Inc.	764,644	-	-	2,946
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd.	1,002,242	1,274,809	-	3,950
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	57,570	14,156	-	91
LG Chem (Taiwan), Ltd.	119,050	-	-	8,018
LG Chem Display Materials (Beijing) Co.,Ltd.	1,321	-	-	8,876
Tianjin LG Bohai Chemical Co.,Ltd.	482	-	-	-
LG Chem (China) Investment Co.,Ltd.	-	-	-	45,939
LG Chem (Tianjin) Engineering Plastics Co.,Ltd.	29,378	-	-	37
LG Chem Europe GmbH	539,297	-	-	27,132
LG Chem Poland Sp. z o.o.	19,863	-	-	8,289
LG NanoH2O, Inc.	8,038	-	-	8,598
LG Chem Michigan Inc.	69,194	264	-	5
Nanjing LG Chem New Energy Battery Co.,Ltd.	75,763	139,392	-	4,718
Others	90,637	15,314	2	38,931
<b>Associates and joint ventures</b>				
SEETEC Co.,Ltd.	28,790	116,707	1,199	88,239
TECWIN Co.,Ltd.	-	166	4,225	540
HL Greenpower Co.,Ltd.	260,001	-	-	-
Others	875	-	-	2,685
<b>Other related parties</b>				
LG MMA Corporation	84,326	221,766	-	5,356
SERVEONE	14,392	470,866	326,512	111,553
LG CNS Co., Ltd. and its subsidiaries	31,376	2,038	153,814	53,085
Others	8	-	-	11,433
<b>Others</b>				
LG Display Co., Ltd. and its subsidiaries	917,863	-	14,750	2,153
LG Electronics Inc. and its subsidiaries	945,109	187,138	267,837	28,799
LG International Corp. and its subsidiaries	298,639	210,412	517	285,318

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

LG Hausys, Ltd. and its subsidiaries	214,583	7,906	3,289	7,688
Others	21,226	27,934	1,203	9,354
<b>Total</b>	<b>5,923,033</b>	<b>2,693,072</b>	<b>773,348</b>	<b>828,534</b>

(in millions of Korean won)

	2016			
	Purchase and others			
	Sales and others	Purchase of raw materials /merchandises	Acquisition of property, plant and equipment and intangible assets	Others
<b>Entity with a significant influence over the Company</b>				
LG Corp.	12	-	-	49,446
<b>Subsidiaries</b>				
Ningbo LG Yongxing Chemical Co.,Ltd.	75,355	1,101	-	-
LG Chem HK Ltd.	202,243	-	-	556
LG Chem America, Inc.	624,887	-	-	3,404
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd.	943,849	1,021,496	-	880
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	17,029	8,659	-	-
LG Chem (Taiwan), Ltd.	129,301	-	-	8,611
LG Chem Display Materials (Beijing) Co.,Ltd.	19	-	-	8,400
Tianjin LG Bohai Chemical Co.,Ltd.	427	-	-	-
LG Chem (China) Investment Co.,Ltd.	-	-	-	42,118
LG Chem (Tianjin) Engineering Plastics Co.,Ltd.	13,200	6	-	-
LG Chem Europe GmbH	406,601	-	-	20,035
LG Chem Poland Sp. z o.o.	10,338	-	-	8,271
LG NanoH2O, Inc.	5,651	855	-	10,455
LG Chem Michigan Inc.	61,795	664	-	-
Nanjing LG Chem New Energy Battery Co.,Ltd.	49,218	23,910	-	135
Others	30,016	6	-	24,537
<b>Associates and joint ventures</b>				
SEETEC Co.,Ltd.	28,546	100,780	15	82,477
TECWIN Co.,Ltd.	-	208	1,801	-
HL Greenpower Co.,Ltd.	119,257	-	-	-
Others	2,676	-	-	2,347
<b>Other related parties</b>				
LG MMA Corporation	81,839	138,375	-	3,118
SERVEONE	16,718	416,666	107,494	74,395
LG CNS Co., Ltd. and its subsidiaries	24,411	3,440	67,996	48,278
Others	26	-	-	10,419
<b>Others</b>				
LG Display Co., Ltd. and its subsidiaries	941,355	-	-	65
LG Electronics Inc. and its subsidiaries	613,863	124,855	18,519	14,374

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

LG International Corp. and its subsidiaries	257,640	76,690	10	197,425
LG Hausys, Ltd. and its subsidiaries	200,139	2,965	6,880	78,220
Others	21,688	34,427	310	8,207
<b>Total</b>	<b>4,878,099</b>	<b>1,955,103</b>	<b>203,025</b>	<b>696,173</b>

Balances of receivables and payables arising from sales and purchases of goods and services as at December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

	December 31, 2017			
	Receivables			
	Trade receivables and others	Loan receivables	Other receivables	Total
<b>Entity with a significant influence over the Company</b>				
LG Corp.	-	-	9,183	9,183
<b>Subsidiaries</b>				
Ningbo LG Yongxing Chemical Co.,Ltd.	13,096	-	7,626	20,722
LG Chem HK Ltd.	17,346	-	-	17,346
LG Chem America, Inc.	165,994	-	-	165,994
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd.	229,010	-	42,364	271,374
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	15,187	-	3,169	18,356
LG Chem (Taiwan), Ltd.	42,080	-	62	42,142
LG Chem Display Materials (Beijing) Co.,Ltd.	-	-	6	6
Tianjin LG Bohai Chemical Co.,Ltd.	-	-	235	235
LG Chem (China) Investment Co.,Ltd.	-	-	-	-
LG Chem (Tianjin) Engineering Plastics Co.,Ltd.	6,501	-	1,396	7,897
LG Chem Europe GmbH	205,429	-	55	205,484
LG Chem Poland Sp. z o.o.	9,263	-	1,390	10,653
LG NanoH2O, Inc.	254	-	1	255
LG Chem Michigan Inc.	10,870	-	5,984	16,854
Nanjing LG Chem New Energy Battery Co.,Ltd.	30,669	-	225	30,894
Others	38,962	2,679	6,936	48,577
<b>Associates and joint ventures</b>				
SEETEC Co.,Ltd.	1,752	-	279	2,031
TECWIN Co.,Ltd.	-	-	-	-
HL Greenpower Co.,Ltd.	60,726	-	-	60,726
Others	16	-	-	16
<b>Other related parties</b>				
LG MMA Corporation	8,663	-	482	9,145
SERVEONE	2,893	-	27,648	30,541
LG CNS Co., Ltd. and its subsidiaries	20,209	-	-	20,209
Others	-	-	4,358	4,358
<b>Others</b>				
LG Display Co., Ltd. and its	130,995	-	4,227	135,222



**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

subsidiaries				
LG Electronics Inc. and its subsidiaries	282,900	-	43,331	326,231
LG International Corp. and its subsidiaries	48,332	-	700	49,032
LG Hausys, Ltd. and its subsidiaries	39,748	-	92	39,840
Others	318	-	398	716
<b>Total</b>	<b>1,381,213</b>	<b>2,679</b>	<b>160,147</b>	<b>1,544,039</b>

(in millions of Korean won)

	<b>December 31, 2017</b>			
	<b>Payables</b>			
	<b>Trade payables</b>	<b>Borrowings</b>	<b>Other payables</b>	<b>Total</b>
<b>I Entity with a significant influence over the Company</b>				
LG Corp.	-	-	7,897	7,897
<b>Subsidiaries</b>				
Ningbo LG Yongxing Chemical Co.,Ltd.	-	-	-	-
LG Chem HK Ltd.	-	-	-	-
LG Chem America, Inc.	26	-	217	243
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd.	-	-	362,437	362,437
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	1,074	-	-	1,074
LG Chem (Taiwan), Ltd.	-	-	188	188
LG Chem Display Materials (Beijing) Co.,Ltd.	-	-	444	444
Tianjin LG Bohai Chemical Co.,Ltd.	-	-	-	-
LG Chem (China) Investment Co.,Ltd.	-	-	4,622	4,622
LG Chem (Tianjin) Engineering Plastics Co.,Ltd.	-	-	-	-
LG Chem Europe GmbH	-	-	5,278	5,278
LG Chem Poland Sp. z o.o.	-	-	794	794
LG NanoH2O, Inc.	-	-	2,467	2,467
LG Chem Michigan Inc.	111	-	49	160
Nanjing LG Chem New Energy Battery Co.,Ltd.	14,473	-	21	14,494
Others	1,042	-	2,258	3,300
<b>Associates and joint ventures</b>				
SEETEC Co.,Ltd.	10,698	-	10,759	21,457
TECWIN Co.,Ltd.	-	-	2,195	2,195
HL Greenpower Co.,Ltd.	-	-	-	-
Others	-	-	-	-
<b>Other related parties</b>				
LG MMA Corporation	18,837	-	-	18,837
SERVEONE	-	-	358,865	358,865
LG CNS Co., Ltd. and its subsidiaries	-	-	98,648	98,648

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Others	-	-	541	541
<b>Others</b>				
LG Display Co., Ltd. and its subsidiaries	-	-	8,660	8,660
LG Electronics Inc. and its subsidiaries	97,033	-	12,915	109,948
LG International Corp. and its subsidiaries	12,183	-	39,707	51,890
LG Hausys, Ltd. and its subsidiaries	3,409	-	1,797	5,206
Others	2,085	-	5,779	7,864
<b>Total</b>	<b>160,971</b>	<b>-</b>	<b>926,538</b>	<b>1,087,509</b>

(in millions of Korean won)

<b>December 31, 2016</b>				
<b>Receivables</b>				
	<b>Trade receivables</b>			<b>Total</b>
	<b>and others</b>	<b>Loan receivables</b>	<b>Other receivables</b>	
<b>Entity with a significant influence over the Company</b>				
LG Corp.	-	-	6,572	6,572
<b>Subsidiaries</b>				
Ningbo LG Yongxing Chemical Co.,Ltd.	8,712	-	7,463	16,175
LG Chem HK Ltd.	17,120	-	-	17,120
LG Chem America, Inc.	152,194	-	364	152,558
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd.	199,740	-	49,355	249,095
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	7,406	-	2,745	10,151
LG Chem (Taiwan), Ltd.	43,149	-	47	43,196
LG Chem Display Materials (Beijing) Co.,Ltd.	-	-	11	11
Tianjin LG Bohai Chemical Co.,Ltd.	-	-	253	253
LG Chem (China) Investment Co.,Ltd.	-	-	-	-
LG Chem (Tianjin) Engineering Plastics Co.,Ltd.	3,034	-	1,546	4,580
LG Chem Europe GmbH	146,380	-	1	146,381
LG Chem Poland Sp. z o.o.	2,354	-	965	3,319
LG NanoH2O, Inc.	2,326	-	46	2,372
LG Chem Michigan Inc.	10,728	-	5,654	16,382
Nanjing LG Chem New Energy Battery Co.,Ltd.	5,215	-	3,914	9,129
Others	4,643	-	4,314	8,957
<b>Associates and joint ventures</b>				
SEETEC Co.,Ltd.	-	-	-	-
TECWIN Co.,Ltd.	-	-	-	-
HL Greenpower Co.,Ltd.	43,493	-	-	43,493
LG Fuel Cell Systems Inc.	-	9,857	341	10,198
Others	-	-	20	20
<b>Other related parties</b>				
LG MMA Corporation	8,858	-	567	9,425

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

SERVEONE	3,128	-	25,883	29,011
LG CNS Co., Ltd. and its subsidiaries	17,152	-	-	17,152
Others	-	-	3,752	3,752
<b>Others</b>				
LG Display Co., Ltd. and its subsidiaries	105,174	-	1,616	106,790
LG Electronics Inc. and its subsidiaries	229,910	-	22,294	252,204
LG International Corp. and its subsidiaries	37,592	-	700	38,292
LG Hausys, Ltd. and its subsidiaries	34,791	-	145	34,936
Others	752	-	937	1,689
<b>Total</b>	<b>1,083,851</b>	<b>9,857</b>	<b>139,505</b>	<b>1,233,213</b>

(in millions of Korean won)

<b>December 31, 2016</b>				
<b>Payables</b>				
	<b>Trade payables</b>	<b>Borrowings</b>	<b>Other payables</b>	<b>Total</b>
<b>  Entity with a significant influence over the Company</b>				
LG Corp.	-	-	420	420
<b>Subsidiaries</b>				
Ningbo LG Yongxing Chemical Co.,Ltd.	-	-	-	-
LG Chem HK Ltd.	-	-	-	-
LG Chem America, Inc.	-	-	484	484
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd.	-	-	201,888	201,888
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	1,986	-	-	1,986
LG Chem (Taiwan), Ltd.	-	-	750	750
LG Chem Display Materials (Beijing) Co.,Ltd.	-	-	676	676
Tianjin LG Bohai Chemical Co.,Ltd.	-	-	-	-
LG Chem (China) Investment Co.,Ltd.	-	-	4,407	4,407
LG Chem (Tianjin) Engineering Plastics Co.,Ltd.	-	-	4	4
LG Chem Europe GmbH	-	-	2,300	2,300
LG Chem Poland Sp. z o.o.	-	-	786	786
LG NanoH2O, Inc.	-	-	3,774	3,774
LG Chem Michigan Inc.	-	-	2,467	2,467
Nanjing LG Chem New Energy Battery Co.,Ltd.	-	-	12,695	12,695
Others	-	-	1,540	1,540
<b>Associates and joint ventures</b>				
SEETEC Co.,Ltd.	10,009	-	9,695	19,704
TECWIN Co.,Ltd.	76	-	140	216
HL Greenpower Co.,Ltd.	-	-	-	-
LG Fuel Cell Systems Inc.	-	-	-	-

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Others	-	-	95	95
<b>Other related parties</b>				
LG MMA Corporation	15,615	-	-	15,615
SERVEONE	-	-	145,722	145,722
LG CNS Co., Ltd. and its subsidiaries	25,609	-	10,344	35,953
Others	-	-	291	291
<b>Others</b>				
LG Display Co., Ltd. and its subsidiaries	-	-	30	30
LG Electronics Inc. and its subsidiaries	59,019	-	4,031	63,050
LG International Corp. and its subsidiaries	7,377	-	23,170	30,547
LG Hausys, Ltd. and its subsidiaries	4,401	-	418	4,819
Others	2,392	-	4,084	6,476
<b>Total</b>	<b>126,484</b>	<b>-</b>	<b>430,211</b>	<b>556,695</b>

Fund transactions with related parties for the years ended December 31, 2017 and 2016, are as follows:

(in millions of Korean won)

	<b>2017</b>		<b>2016</b>	
	<b>Equity contributions in cash (capital reduction)</b>	<b>Loan (repayment)</b>	<b>Equity contributions in cash (capital reduction)</b>	<b>Loan (repayment)</b>
<b>Subsidiaries</b>				
LG Chem (Nanjing) Information & Electronics Materials Co.,Ltd.	238,162	-	80,356	-
Nanjing LG Chem New Energy Battery Co., Ltd	56,082	-	7,823	-
LG Chem (China) Investment Co.,Ltd.	53,441	-	7,165	-
LG Chem(Chongqing) Engineering Plastics Co., Ltd.	28,141	-	-	-
LG Chem Hai Phong Veitnam Co.,Ltd.	3,079	-	-	-
FarmHannong Co.,Ltd.	-	-	300,000	-
LG Chem Wroclaw Energy Sp. z o.o.	128,107	-	10,468	-
LG Chem(HUIZHOU) Petrochemical Co., Ltd	-	-	58,771	-
NanoH2O (Jiangsu) Water Processing Technology Co. Ltd.	-	-	6,400	-
LG Chem Australia Pty Ltd	429	-	-	-
LG Life Sciences America Inc.	-	(2,242)	-	-
<b>Associates and joint ventures</b>				
FJ Composite Materials Co.,LTD.	3,015	-	-	-

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

LG Fuel Cell Systems Inc.	24,527	(9,584)	17,555	-
KLPE Limited Liability Partnership	-	-	(23,724)	-
WUXI CL New Energy Technology Ltd	1,178	-	-	-
LG Holdings (HK) Ltd.	(19,499)	-	-	-
<b>Total</b>	<b>516,662</b>	<b>(11,826)</b>	<b>464,814</b>	<b>-</b>

Dividends received from related parties for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
<b>Subsidiaries</b>		
Ningbo LG Yongxing Chemical Co.,Ltd	52,880	45,778
LG Chem (Taiwan), Ltd.	5,533	10,379
LG Chemical (Guangzhou) Engineering Plastics Co.,Ltd.	335	1,781
LG Chem Display Materials (Beijing) Co.,Ltd.	1,304	-
<b>Associates and joint ventures</b>		
SEETEC Co.,Ltd.	10,000	17,500
LG VINA Chemical Co.,Ltd.	846	926
<b>Total</b>	<b>70,898</b>	<b>76,364</b>

Dividends paid to related party for the years ended December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
<b>Entities with significant influence over the Company</b>		
LG Corp.	111,097	99,987

Compensation for key management of the Company for the years ended December 31, 2017 and 2016, consists of:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Short-term employee benefits	69,251	38,838
Post-employment benefits	5,722	2,846
<b>Total</b>	<b>74,973</b>	<b>41,684</b>

Key management includes directors and audit committee members having duties and responsibilities over planning, operations and controlling of the Company's business activities.

There are no provision recognized for receivables of related parties as at December 31, 2017 and no impairment loss on receivables for related parties are recognized for the years ended December 31, 2017 and 2016.

Details of the guarantees provided by the Company for related parties at the reporting date are disclosed in Note 18.

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

**32. Cash generated from operations**

Reconciliation between profit before income tax and cash generated from operations for the years ended December 31, 2017 and 2016, is as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
<b>Profit before income tax</b>	2,000,635	1,744,074
<b>Adjustments for:</b>		
Depreciation	979,936	961,076
Amortization	76,265	44,903
Post-employment benefits	131,550	116,214
Finance income	(123,905)	(182,373)
Finance costs	97,647	69,307
Foreign exchange differences	(64,653)	(5,045)
Loss (gain) on valuation of inventories	(204)	21,745
Gain on disposal of property, plant and equipment	(11,256)	(5,556)
Loss on disposal of property, plant and equipment	12,565	14,587
Loss on disposal of intangible assets	2,208	1,342
Impairment loss on property, plant and equipment	140,240	48,915
Impairment loss on intangible assets	3,504	535
Reversal of impairment loss on property, plant and equipment	(12,641)	-
Impairment loss on investments in joint ventures	19,383	-
Gain on disposal of investments in joint ventures	-	(4,015)
Additions to provisions	167,756	110,444
Other expenses (income)	(21,528)	3,206
Decrease (increase) in inventories	(173,775)	(69,561)
Decrease (increase) in trade receivables	(736,651)	(187,798)
Decrease (increase) in other receivables	14,621	(20,826)
Decrease (increase) in other current assets	(61,409)	(48,295)
Decrease (increase) in derivatives	(2,114)	(1,408)
Increase (decrease) in trade payables	265,777	221,099
Increase (decrease) in other payables	416,764	114,020
Increase (decrease) in other current liabilities	203,207	(45,633)
Decrease in net defined benefit liabilities	(46,182)	(174,214)
Decrease in provisions	(126,200)	(67,010)
Other cash flows from operations	2,261	3,848
<b>Cash generated from operations</b>	<b>3,153,801</b>	<b>2,663,581</b>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

Changes in liabilities arising from financial activities for the years ended December 31, 2017, are as follows:

	2017					
	At January 1, 2017	Cash flows from financing activities	Business combination	Exchange differences	Amortization (transfer)	Reclassification of current portion
Short-term borrowings	450,853	(840,789)	453,045	5,137	-	(63,110)
Long-term borrowings	30,272	(45,700)	46,980	(5,137)	952	-
Debentures	199,955	550,280	229,720	-	(2,223)	-
<b>Total</b>	<b>681,080</b>	<b>(336,209)</b>	<b>729,745</b>	<b>-</b>	<b>(1,271)</b>	<b>(63,110)</b>
						<b>1,010,235</b>

The significant non-cash transactions for the years ended December 31, 2017 and 2016, are as follows:

(in millions of Korean won)	2017	2016
Transfer of construction-in-progress	1,178,904	686,371
Transfer of machinery-in-transit	74,475	39,604
Reclassification of long-term borrowings into current maturities	135,059	204,659
Acquisition of an entity by means of an equity issue	1,138,593	-

### 33. Appropriation of Retained Earnings

The appropriation of retained earnings for the year ended December 31, 2017, is expected to be appropriated at the shareholders' meeting on March 16, 2018. The appropriation date for the year ended December 31, 2016, was March 17, 2017.

The appropriation of retained earnings for the years ended December 31, 2017 and 2016, is as follows:

(in millions of Korean won)	2017	2016
Unappropriated retained earnings carried over from prior year	-	-
Profit for the year	1,605,223	1,379,589
Remeasurements of net defined benefit liabilities	(3,003)	(18,346)
<b>Retained earnings available for appropriation</b>	<b>1,602,220</b>	<b>1,361,243</b>
<b>Transfer from other reserves</b>		
Reserve for technology development	166,667	246,666
<b>Appropriation of retained earnings</b>		
Legal reserve	10,953	-
Dividends	460,058	368,055
Reserve for technology development	1,297,876	1,239,854
	<b>1,768,887</b>	<b>1,607,909</b>
<b>Unappropriated retained earnings to be carried forward</b>	<b>-</b>	<b>-</b>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

**34. Business Combination**

In order to enhance future-oriented business portfolio and leap into a global player of red bio industry by enlarging investment in long-term and stable new drugs development, the Company merged LG Life Sciences, Ltd. on January 1, 2017.

Goodwill of ₩ 686,229 million arising from the business combination is attributable to sales increase expected from combining the operations of the Company and Life Sciences business. Goodwill recognized through the business combination is not deductible for income tax purposes.

The following table summarizes the consideration paid for business combination, the fair value of assets acquired and liabilities assumed at the acquisition date:

<i>(in millions of Korean won)</i>	<b>Amount</b>
Consideration	
Equity securities	
(ordinary 4,321,243 shares, preferred 59,879 shares) <sup>1</sup>	1,138,593
Total consideration	1,138,593
Recognized amounts of identifiable assets acquired and liabilities assumed	
Cash and cash equivalents	36,319
Trade and other (non-current) receivables	118,809
Inventories	117,880
Property, plant and equipment	492,846
Intangible assets	273,447
Investments	3,977
Other assets	7,431
Trade payables	(37,411)
Borrowings	(729,745)
Provisions	(6,053)
Net defined benefit liabilities	(11,829)
Other liabilities	(150,518)
Treasury shares	
(ordinary 1,284,891 shares, preferred 10,328 shares) <sup>1</sup>	337,211
Fair value of identifiable net assets	452,364
Goodwill	686,229
<b>Total</b>	<b>1,138,593</b>

<sup>1</sup>The fair value of ordinary shares, preferred shares and treasury shares acquired were based on the market price at the acquisition date.

With regard to the above business combination, stock issuance cost of ₩73 million was deducted from equity.

The fair value and gross contractual amount for trade and other (non-current) receivables at the acquisition date amount ₩120,794 million, of which ₩1,985 million is expected to be uncollectible.

The revenues of ₩ 529,364 million and profit of ₩46,444 million for year ended December 31, 2017, arose after the acquisition date are reflected in the separate statement of profit or loss.

On August 31, 2016, the Company acquired assets and liabilities relating to Pressure Sensitive Adhesive Application business from LG Hausys, Ltd. As a result of the business combination, the



**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

Company expects an increase in sales through diversification of market such as adding business portfolio by expanding a business field to an industrial adhesive film area.

Goodwill of ₩ 4,112 million arose from the business combination is resulted from the customer relationship newly acquired and sales increase from combination of the Company and Pressure Sensitive Adhesive Application business.

The following table summarizes the consideration paid for LG Hausys, Ltd. relating to acquiring Pressure Sensitive Adhesive Application business, the fair value of assets acquired and liabilities assumed at the acquisition date:

<i>(in millions of Korean won)</i>	<b>Amount</b>
Consideration	
Cash and cash equivalents	75,303
Total consideration	<u>75,303</u>
Recognized amounts of identifiable assets acquired and liabilities assumed	
Trade receivables	15,958
Inventories	9,998
Property, plant and equipment	43,006
Intangible assets	13,487
Other assets	1,298
Trade payables	(12,356)
Net defined benefit liabilities	(200)
Fair value of identifiable net assets	<u>71,191</u>
Goodwill	<u>4,112</u>
<b>Total</b>	<b><u>75,303</u></b>

The fair value and gross contractual amount for trade receivables at the acquisition date are ₩ 15,958 million, respectively. No trade receivables are expected to be uncollectible.

The Company has the right to be reimbursed from LG Hausys, Ltd. for damages resulted from lawsuits filed prior to the business combination of the Pressure Sensitive Adhesive Application business.

On November 1, 2016, the Company acquired assets and liabilities relating to Positive electrode business from GSEM Co., Ltd. As a result of the business combination, the Company expects to result in upgrade of Positive electrode manufacturing technologies and enhancement of competency in battery production through vertical integration.

The following table summarizes the consideration paid for GSEM CO., LTD. in relation to acquiring Positive Electrode business, the fair value of assets acquired and liabilities assumed at the acquisition date:

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

<i>(in millions of Korean won)</i>	<b>Amount</b>
Consideration	
Cash and cash equivalents	59,307
Total consideration	<u>59,307</u>
Recognized amounts of identifiable assets acquired and liabilities assumed	
Cash and cash equivalents	800
Inventories	12,318
Property, plant and equipment	47,155
Intangible assets	153
Investment property	1,041
Other assets	928
Provisions	(800)
Net defined benefit liabilities	(838)
Other liabilities	(1,450)
Fair value of identifiable net assets	<u>59,307</u>
Goodwill	-
<b>Total</b>	<u>59,307</u>

**35. Assets held for sale**

The Company decided to dispose of Electrolyte business, 2CCL business and others, with the approval of management in February 2016 and January 2017, respectively. The related assets were reclassified as assets held for sale. The disposal is expected to be completed in 2018.

Details of assets of disposal group classified as assets held for sale as at December 31, 2017 and 2016, are as follows:

<i>(in millions of Korean won)</i>	<b>December 31, 2017</b>	<b>December 31, 2016</b>
<b>Assets of disposal group</b>		
Property, plant and equipment	4,236	2,306
Intangible assets	358	-
<b>Total</b>	<u>4,594</u>	<u>2,306</u>

Assets of the disposal group were measured at fair value immediately before the initial classification as assets held for sale and the related other non-operating expenses for the years ended December 31, 2017 and 2016, is as follows:

<i>(in millions of Korean won)</i>	<b>2017</b>	<b>2016</b>
Impairment loss on property, plant and equipment	9,061	1,216
Impairment loss on intangible assets	4	-
<b>Total</b>	<u>9,065</u>	<u>1,216</u>

**LG Chem, Ltd.**  
**Notes to the Separate Financial Statements**  
**December 31, 2017 and 2016**

---

**36. Events after the reporting period**

- (1) With the approval of the corporate management committee on February 6, 2018, the Company decided the issuance of the 51<sup>st</sup> debentures and issued the 51-1<sup>st</sup> of ₩190,000 million, 51-2<sup>nd</sup> of ₩240,000 million, 51-3<sup>rd</sup> of ₩270,000 million and 51-4<sup>th</sup> of ₩300,000 million, respectively, on February 20, 2018. The maturity date of each debenture is February 20, 2021, February 20, 2023, February 20, 2025, and February 20, 2028, respectively.
- (2) On February 6, 2018, the corporate management committee approved that the Company would provide financial guarantee for debenture of ₩90,000 million to be issued by FarmHannong. Co. Ltd., subsidiary of the Company, on March 2, 2018.

**37. Approval of Issuance of the Financial Statements**

The separate financial statements 2017 were approved for issue by the Board of Directors on January 30, 2018 and are subject to change with approval of shareholders at their Annual General Meeting.

## **Report on Independent Accountants' Review of Internal Accounting Control System**

To the Representative Director of  
LG Chem, Ltd.

We have reviewed the accompanying management's report on the operations of the Internal Accounting Control System (IACS) of LG Chem, Ltd. (the Company) as at December 31, 2017. The Company's management is responsible for designing and operating IACS and for its assessment of the effectiveness of IACS. Our responsibility is to review the management's report on the operations of the IACS and issue a report based on our review. The management's report on the operations of the IACS of the Company states that "based on the assessment on the operations of the IACS, the Company's IACS has been effectively designed and is operating as at December 31, 2017, in all material respects, in accordance with the IACS standards."

Our review was conducted in accordance with the IACS review standards established by the Korean Institute of Certified Public Accountants. Those standards require that we plan and perform, in all material respects, the review of management's report on the operations of the IACS to obtain a lower level of assurance than an audit. A review is to obtain an understanding of a company's IACS and consists principally of inquiries of management and, when deemed necessary, a limited inspection of underlying documents, which is substantially less in scope than an audit.

A company's IACS is a system to monitor and operate those policies and procedures designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with Korean IFRS. Because of its inherent limitations, IACS may not prevent or detect a material misstatement of the financial statements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Based on our review, nothing has come to our attention that causes us to believe that management's report on the operations of the IACS, referred to above, is not presented fairly, in all material respects, in accordance with the IACS standards established by IACSOC.

Our review is based on the Company's IACS as at December 31, 2017, and we did not review management's assessment of its IACS subsequent to December 31, 2017. This report has been prepared pursuant to the Acts on External Audit for Stock Companies in Korea and may not be appropriate for other purposes or for other users.

Samil PricewaterhouseCoopers

March 6, 2018

## **Report on the Operations of the Internal Accounting Control System**

To the Board of Directors and Audit Committee of  
LG Chem, Ltd.

I, as the Internal Accounting Control Officer (IACO) of LG Chem, Ltd. (the Company), assessed the status of the design and operations of the Company's internal accounting control system (IACS) for the year ended December 31, 2017.

The Company's management including IACO is responsible for designing and operating IACS. I, as the IACO, assessed whether the IACS has been effectively designed and is operating to prevent and detect any error or fraud which may cause any misstatement of the financial statements, for the purpose of establishing the reliability of financial reporting and the preparation of financial statements for external purposes. I, as the IACO, applied the IACS standard for the assessment of design and operations of the IACS.

Based on the assessment on the operations of the IACS, the Company's IACS has been effectively designed and is operating as at December 31, 2017, in all material respects, in accordance with the IACS standards.

January 30, 2018

Ho-Young Jeong, Internal Accounting Control Officer

Jin-Soo Park, Chief Executive Officer